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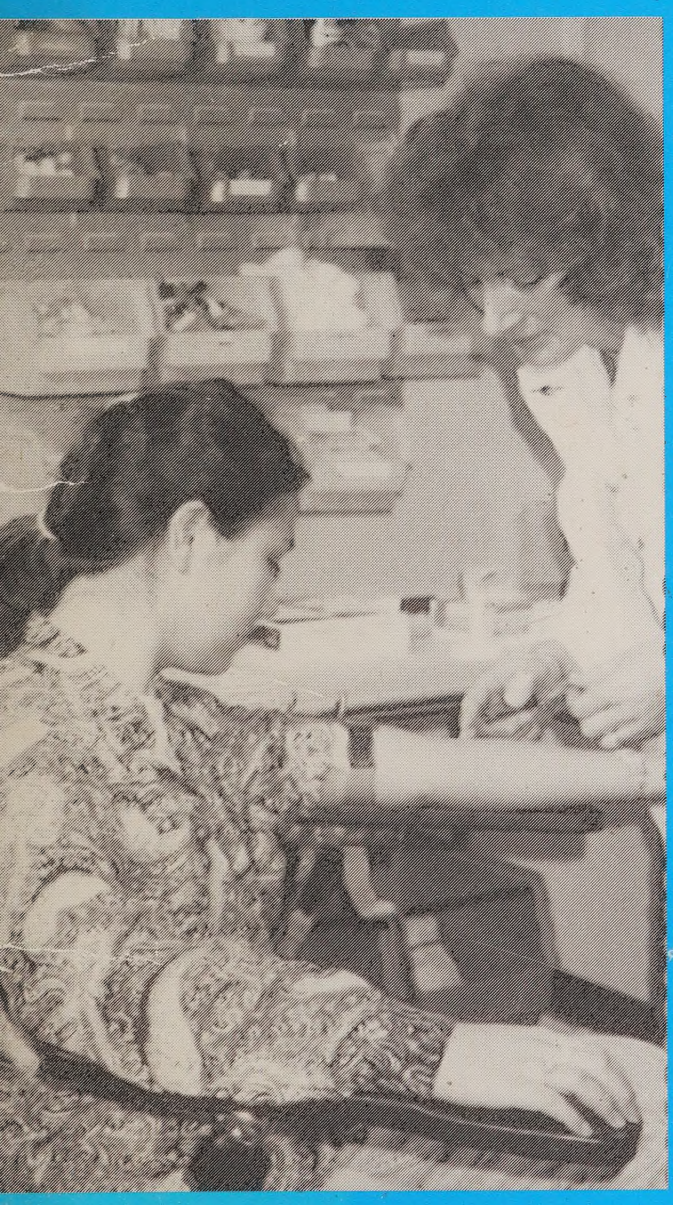
MC0079

HEALTH BUILDING NOTE 12

Out-patients Department

DEPARTMENT OF HEALTH
and the WELSH OFFICE



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Contents

		Page
Preface		Inside front cover
1 Scope of Health Building Note		
1.1	Introduction	3
1.6	Inclusions	3
1.7	Exclusions	3
1.9	Revision of guidance for out-patient accommodation	3
1.10	Design Briefing System (DBS)	4
1.11	Works Guidance Index	4
1.12	Cost Allowances	4
1.14	Equipment	4
1.15	Capricode	4
2 General Service Considerations		
2.1	Service provided and major functions	5
2.7	Factors affecting size of department	5
2.13	Appointments system, reception and waiting	6
2.17	Pathology tests	6
3 General Function and Design Requirements		
3.1	Introduction	7
3.2	Location and relationships	7
3.7	General design principles	7
3.8	Specialty clinics	8
3.11	Signposting	8
3.15	Staff facilities	8
3.17	Security	8
3.19	Materials handling	8
3.20	Communications	9
3.21	Telephone services	9
3.23	Data transmission	9
3.24	Next patient call system	9
3.25	Patient/staff calls	9
3.26	Controlled Drugs cupboard and alarm	9
3.27	Internal environment	9
3.28	Natural and artificial lighting	9
3.31	Noise and sound attenuation	9
3.35	Windows	10
4 Specific Functional and Design Requirements		
4.1	Introduction	11
4.3	Description of accommodation	11
4.4	Enquiry point inside OPD	11
4.6	Children's play area and push chair parking	11
4.7	Clinic suites	11
4.11	Clinic reception desk	11
4.13	Clinic waiting area	11
4.18	Physical measurement	14
4.19	Combined consulting and examination rooms	14
4.24	Consulting rooms with separate examination rooms	15
4.26	Support services	15
4.27	Treatment waiting area	15
4.28	Treatment facility	15
4.33	Clean utility room	15
4.34	Dirty utility room	20
4.35	Chiropody waiting area	20
4.36	Chiropody room	20
4.39	Chiropody store	20
4.40	Venepuncture	20
4.41	Venepuncture waiting area	20
4.42	Venepuncture cubicles	20
4.43	Staff facilities	20
4.50	Storage	21
4.56	WCs	23
4.59	Ancillary accommodation	23
4.62	Plaster facilities	23
5 Environmental and Other Topics		
5.1	Introduction	24
5.2	Statutory and other requirements	24
5.3	Upgrading or adaptation of existing buildings	24
5.13	Fire precautions	25
5.18	Smoking	25
5.19	Damage in health buildings	25
5.20	Maintenance and cleaning	25
5.21	Information technology in the NHS: provision for Automatic Data Processing (ADP)	25
5.24	Education and training	26
5.29	Portering	26
5.30	Courtyards	26
5.33	Component Data	26
5.35	Internal environmental conditions	26
6 Engineering Services		
6.1	Introduction	28
6.3	Model specifications	28
6.4	Economy	28
6.10	Maximum demands	28

		Page
6.11	Space requirements for services	28
6.14	Activity Data	29
6.15	Safety	29
6.16	Fire precautions	29
6.18	Noise	29
6.19	Control access	29
6.20	Engineering Commissioning	30
6.21	MECHANICAL SERVICES	30
6.23	Heating	30
6.25	Temperature controls	30
6.27	Ventilation	30
6.35	Ventilation controls	31
6.36	Hot, cold and drinking water services	31
6.40	ELECTRICAL SERVICES	31
6.43	Electrical installation	31
6.44	Electrical interference	31
6.46	Lighting	32
6.51	Lighting of corridors, circulation and waiting areas	32
6.52	Examination lighting in treatment and consulting/examination rooms	32
6.53	Controlled Drugs cupboard	32
6.54	Socket-outlets	32
6.62	X-ray equipment	33
6.63	Emergency electrical supplies	33
6.66	Patient/staff call system	33
6.67	Staff/staff call system	33
6.68	Call systems (general)	33
6.71	Next patient call systems	33
6.72	Staff location system	33
6.73	Telephones	33
6.77	Wireways for Data links	34
6.78	Electric clocks	34
6.79	Lightning protection	34
6.80	INTERNAL DRAINAGE	34
6.81	Design parameters	34
6.83	Operational considerations	34
6.84	Materials specification	34
References		35

		Page
7	**Cost Information**	
7.1	Introduction	3
7.3	Functional units	3
7.4	Plaster facilities	3
7.5	Works Costs	3
7.7	Circulation	3
7.8	Communications	3
7.9	Dimensions	3
7.12	Engineering spaces	3
7.13	Engineering Services	3
	Schedules of Accommodation	3
	Plaster Facilities	3
8	**Activity Data**	
8.1	Introduction	4
8.6	Activity Data applicable to this Note	4
	List of Activity Data "A" Sheets	4
Appendix:	**Assessment of the Number of Consulting/Examination Rooms Needed**	4
Bibliography	(See Chapter 6 for engineering references)	4

Diagrams

1.	Patient flow pattern in OPD	1
2.	Comparative space utilisation in choice of provision of consulting/examination rooms	1
3.	Alternative clinic suite arrangements using a group of six combined consulting/ examination rooms	1
4.	Flexibility of use of combined consulting/ examination rooms	1
5.	Relationship between treatment facilities and utility rooms	1
6.	Staff facilities in an OPD	2
7.	Storage requirements in an OPD	2

1 Scope of Health Building Note

Introduction

1.1 This Health Building Note (HBN) deals with the planning and design of out-patient accommodation. It replaces Hospital Building Note 12, Out-patient Department, which was first issued in 1961, and last reprinted in 1974. The guidance is principally for use in connection with departments which are attached to, or form part of, a District General Hospital (DGH), although some of the advice will be equally relevant to facilities provided elsewhere. Health Building Notes reflect the latest Departmental thinking on planning and design.

1.2 Chapter 1 sets out the scope of the services provided in a general out-patients department (OPD). Specific considerations, such as service planning, the characteristics and needs of those attending an OPD, and the size of department, are identified in Chapter 2. Chapter 3 deals with general functional and design requirements. Descriptions of specific activity spaces and design guidance are given in Chapter 4. General environmental topics are discussed in Chapter 5. Engineering services are described in Chapter 6. Costing information is given in Chapter 7. Chapter 8 contains the list of Activity Data "A" Sheets associated with this Note.

1.3 The out-patients department is the 'shop-window' of the hospital. It is one of the departments everyone is likely to visit at least once, and the initial impression, of both the building and its organisation, is likely to remain. A sense of dignity, based on respect for privacy and concern, should be maintained throughout the patient's visit.

1.4 Nationally, the number of patients and escorts attending an OPD each year is usually between 50 and 60 million, a significant number of whom are disabled. The attendance and mass movement within a DGH of a large number of people is a complex operational and logistical problem. A priority of this Note has been to advise on how best to address this situation, while retaining a high level of amenity.

1.5 OPDs contain specialist consultancy clinics. These are attended by out-patients who keep an appointment for consultation and examination, prior to diagnosis and treatment.

Inclusions

1.6 This Note contains guidance on the planning and design of an OPD providing accommodation suitable for a variety of clinical uses. The standard accommodation can be used for some specialty clinics; these include orthopaedic clinics catering for patients with fractures who require access to a plaster facility, which is also described in this Note.

Exclusions

1.7 This Note does not cover out-patient accommodation for:

a. children—(Health Building Note 23, 'Hospital accommodation for children');

b. specialist dental purposes—(Hospital Building Note 28, 'Dental department of the out-patient department');

c. ophthalmic clinics—(Health Building Note 39, 'Ophthalmic clinic');

d. people with acute mental illness—(Health Building Note 35, 'Accommodation for people with acute mental illness'). It is for a health authority to decide whether the out-patient accommodation for acutely mentally ill people should be part of the general OPD of the DGH, or elsewhere;

e. expectant mothers and mothers and their babies—Health Building Note 21—'Maternity department');

f. dermatology clinics—(Design Guide 10 'Accommodation for hospital dermatology services');

g. ear, nose and throat services—(Design Guide 6 'Hospital ENT services');

h. genito-urinary medicine clinics—(guidance for this area is in preparation);

j. acutely disturbed children and adolescents;

k. highly-specialised regional clinics.

1.8 Clinic facilities included as part of the general OPD must not be duplicated when the accommodation in a.–k. above is being planned. Guidance for areas in addition to a–k above may be issued in future. Project teams should ensure that they are aware of all relevant guidance.

Revision of guidance for out-patient accommodation

1.9 Separate guidance will be published dealing with clinics requiring special facilities and accommodation, replacing guidance in existing Notes and Design Guides which is out of date. The first of these, 'Genito-urinary medicine clinics' (GUM clinics), is in preparation.

Design Briefing System

1.10 The Design Briefing System is an aid to the preparation of whole hospital and department policies. A DBS Notebook (DBS) is usually published with each new Health Building Note. The format of DBS is as follows: a portion of the text of the HBN is reproduced on the left-hand page, while on the facing right-hand page a sequence of options implied by the text is set out in such a way that they may easily be marked for acceptance or rejection. The use of the DBS ensures that, for example—

a. in a sequence of decisions, none is overlooked;

b. additional options may easily be entered, and related to existing options;

c. earlier decisions are identified so that they may easily be recaptured when associated topics are under consideration;

d. during refinement of the brief, the implications of modifications which may affect and therefore prompt reconsideration of earlier decisions, may easily be checked;

e. members of the team can review the questions next due for consideration and thus ensure that they are fully informed before the meeting: this has been found to be of great organisational and psychological benefit;

f. members of the team have a clear, up-to-date record of agreed decisions which can easily be identified, as they are not embedded in a mass of minutes not of immediate relevance.

Health Building Notes published by HMSO are accompanied by the relevant DBS notebook. Further information about DBS can be obtained from the Department of Health, Room 503 Euston Tower, 286 Euston Road, London NW1 3DN (tel: 01 388 1188 ext 3590).

Works Guidance Index

1.11 Whilst this Note provides guidance that is current at the time of publication, it must be borne in mind that there are wider considerations associated with medical gases, high risk infectious diseases, fire, energy conservation etc covered by other published guidance which must also be taken into account. Additionally, some aspects of the guidance in this Note may from time-to-time be amended or qualified and it is necessary for project teams to check with the current edition of the Works Guidance Index. The Index is published by the Department in May each year and updated in September and January. It should be noted that as the Index covers the guidance current in the previous year, it carries the previous year's date.

Cost allowances

1.12 The cost allowances associated with this Note are promulgated in an Annex to the Health Notice issued with the Advance Copy of the Note. The areas in the Schedules in the Cost Chapter were those used in preparing the Cost Allowances. They may be used as a guide in preliminary planning, but must under no circumstances be treated as a maximum or as an entitlement. This is dealt with more fully in the Cost Chapter.

1.13 Separate cost allowances relate to the speciality clinic accommodation referred to in paragraph 1.7 (a.–h.).

Equipment

1.14 Equipment is categorised into four groups:

a. **Group 1:** items (including engineering terminal outlets) supplied and fixed within the terms of the building contract;

b. **Group 2:** items which have space and/or building construction and/or engineering service requirements and are fixed within the terms of the building contract but supplied under arrangements separate from the building contract;

c. **Group 3:** as Group 2 but supplied and fixed (or placed in position) under arrangements separate from the building contract;

d. **Group 4:** items supplied under arrangements separate from the building contract, possibly with storage implications but otherwise having no effect on space or engineering service requirements.

The Equipment Cost Allowance Guide (ECAG) provides a sum of money for the functional unit for Groups 2, 3 and 4.

Capricode

1.15 Capricode is the mandatory procedural framework governing the inception, planning, processing and control of individual health building schemes. The aim is to promote a consistent and streamlined approach to capital development that achieves best use of resources through the selection and construction of relevant and cost effective schemes that open on time and within budget. It identifies the main activities and provides a framework for delegation with effective management and the proper accounting for expenditure and performance. (See 'Capricode Health Building Procedures'—issued with HN (86)32—in October 1986; in Wales, issued with WHC (86)62.)

2 General Service Considerations

Service provided and major functions

2.1 The main functions of an OPD are:

a. specialist consultation and examination;

b. treatment of patients who do not require the facilities of either an acute day patient or in-patient ward;

c. screening for the selection of day patients and in-patients;

d. following up and monitoring the condition of out-patients and day patients;

e. discharging patients from the care of the hospital, with referral if necessary to other health services.

2.2 The layout of the department and the interior design should create a friendly and reassuring environment for patients, escorts and staff.

2.3 The total needs for a district's out-patient services will be assessed as part of the strategic planning process. In determining the size and functions of a new OPD at a DGH, the provision available elsewhere must be considered. In developing service plans, health authorities should take account of all their capital stock, which may lead to some out-patient services being de-centralised.

2.4 The location of out-patient services is of critical importance, and careful thought is required in connection with the distribution of facilities within a health district. The size and population of the district, convenience to patients and staff, and the need for support services, are some of the factors to be taken into account.

2.5 Accommodation centralised in a DGH has the following advantages:

a. avoids duplication of services;

b. provides a readily accessible range of expertise;

c. support services close at hand;

2.6 In recent years there has been a move to decentralise some clinic sessions closer to the point of need, for example, to primary health care services. Decentralising services in a district to more than one site may have the advantages of:

a. easier access for patients;

b. the patient is more likely to be familiar with the environment and is therefore likely to be more relaxed, which in turn helps the doctor;

c. improved communication with the primary care team, and increased utilisation of primary health care premises;

d. assisting in the continuity of care by improved links between the GP and the specialist.

Factors affecting size of department

2.7 In this Note, the combined consulting and examination room is used as the basis for determining the size of the OPD. A method for calculating the number of consulting and examination rooms likely to be required, together with a worked example, is given in the Appendix.

2.8 The factors which health authorities need to take into account when assessing their needs include:

a. the district profile (population characteristics, morbidity etc) from which to derive needs by specialties;

b. estimated number of new and return patient attendances that can be dealt with in each clinic session;

c. number of specialties;

d. number of clinic staff to be accommodated (including doctors, nurses and other professional and technical staff);

e. number of rooms required for each clinic, based upon the method of working of the staff concerned;

f. time-tabled use of consulting and examination rooms;

g. availability of staff to conduct and support clinics.

2.9 The conventional working hours for staff in an OPD are 9 am to 5 pm, Monday to Friday, although consideration should be given to providing special evening or weekend clinics, which may be more convenient for some patients and which may provide better utilisation of capital stock. If it is planned to open the OPD outside of standard times, this may affect the size of the accommodation required. Special attention will also need to be given to the availability of support services and facilities, and to the need for cleaning and maintenance.

2.10 Current practice suggests that an OPD in a DGH will usually require not less than 12 consulting and examination rooms allocated for general purposes. Smaller units may be required for specialty clinics, and when extending an existing OPD.

2.11 Cost information is given in Chapter 7 for three sizes of department, ie having 6, 12 and 18 consulting and examination rooms (C/E rooms) with a full range of supporting accommodation. It is possible to derive a cost for variations on these sizes from the information in Chapter 7.

2.12 The likely effect of future trends needs to be considered. These include:

a. shorter lengths of in-patient stay;

b. a consequent increase in the number of out-patient appointments;

c. an assessment of the need for return visits;

d. the likelihood of more frequent direct access by GPs to diagnostic facilities and support services (eg physiotherapy and pathology);

e. the development of joint clinics, eg ophthalmology with various medical specialities, and group treatments such as diabetes clinics, sometimes held in accommodation other than the OPD;

f. the effect of technological developments in primary health care facilities which may influence the number of out-patient attendances at the DGH;

g. the increase in efficiency inherent in new and upgraded buildings, including any changes in methods of working.

Appointments system, reception and waiting

2.13 An effective appointments system is essential to the operation of an efficient OPD. A well-managed system will facilitate the functions of the department and will be an important factor in determining the number of patients for whom waiting space should be provided.

2.14 Out-patient reception, registration and waiting should be located within each clinic suite so that:

a. patient waiting time and unnecessary queuing can be minimised; excessive waiting time has been a major cause of criticism for many years and may detract from an otherwise excellent service;

b. patients can receive better individual attention while at the clinic;

c. any repetition of administrative work concerning patients and their notes is avoided.

This HBN, therefore, describes the provision of clinic reception desks and associated clinic waiting spaces decentralised within the department.

2.15 Anxiety of patients and their escorts when having to wait can be reduced if the department's design achieves a quiet and restful atmosphere. Good organisation is also important, which includes ensuring that patients are kept fully and continuously informed of reasons for any delay. This information may be both verbal and visual, for example by the use of video systems. These could also be used to provide information about health education and services available through organisations such as Community Health Councils.

2.16 Ambulance transport arrangements should be co-ordinated with the appointments system to ensure a smooth flow of patients to and from the clinic sessions and avoid overcrowding in waiting areas.

Pathology tests

2.17 This Note assumes that venepuncture will usually take place in the OPD rather than in the Pathology Department. This system obviates the need for patients to leave the OPD and reduces the need for public access to the Pathology Department. The decision on this, however, is for the project team. (See paragraph 3.6c and HBN 15—Pathology Department (in preparation)).

3 General Functional and Design Requirements

Introduction

3.1 This Chapter provides guidance based on the service objectives outlined in Chapter 2 and includes information on a range of topics and environmental matters which should be taken into account when designing an OPD. Other environmental topics are discussed in Chapter 5.

Location and relationships

3.2 Patients may arrive by ambulance, by car, by public transport, or on foot and will usually have an escort. Adequate car parking space is essential. This should not impede ambulance unloading. There should be separate setting down points close to the OPD entrance for patients arriving by ambulance and by car.

3.3 The OPD is usually situated close to the main entrance to a DGH and access to it is usually via the main entrance. Sometimes, however, the OPD will be located so that it has its own entrance. Guidance regarding a departmental entrance is given in HBN 52—Miscellaneous spaces—(in preparation).

3.4 A large number of patients and escorts will attend the OPD. Many patients will have mobility problems, for example, physical, auditory or visual impairment. For this reason, the OPD should be located on the ground floor. If, unavoidably, any part of it is not on the ground floor, adequate and easy access by lift and stairs must be provided.

3.5 Access and circulation routes to and within the OPD should be sufficiently direct and clearly signposted to prevent patients losing their way within the hospital.

3.6 Departments which have a link with the OPD should be readily accessible from it, but project teams will need to determine how far this can be achieved. The departments concerned are:

a. Accident and emergency department (A and E)
The hospital's major incident plan will make provision for the overflow of emergency services from the A and E department. This may include the OPD.

b. Radiology department
Out-patients may attend the radiology department during the course of an out-patient session. A large proportion of patients will be referred, many of whom will have difficulty in walking or be on stretchers or in wheelchairs. If an orthopaedic clinic is to be operated within the OPD, it should be conveniently located to the Radiology department.

c. Pathology department
Specimens for pathological tests can be taken in the OPD or the pathology department. This Note assumes that blood and urine specimens will be collected routinely in the OPD. If out-patients are required to attend the pathology department, it should be as close as possible to the OPD. If samples are taken in the OPD, they will be delivered in batches to the laboratory, and closeness is not as important. The alternative arrangement will involve the travel of a large number of people to the laboratory. The need for proximity will also be affected by clinics which require immediate analysis of specimens and where that analysis takes place; if they are sent to the laboratory, it is clearly advantageous for the departments to be near to each other.

d. Pharmacy department
If local policy is that out-patients attend the hospital pharmacy to have their prescriptions dispensed, facilities for this will need to be conveniently located.

e. Health records department (HRD)
To assist the constant movement of health records between the HRD and the OPD, the departments should be readily accessible to each other, although they need not be adjacent.

f. Rehabilitation department
Out-patients will be referred from orthopaedic and other clinics.

Other services having links with the OPD may include physiological measurement services, social work, and dietetics. A combined consulting and examination room may be used for these purposes, using portable equipment as necessary. A shared office for visiting staff should be provided.

General design principles

3.7 The aim of the design should be to achieve a quiet, relaxed atmosphere, bearing in mind that there is a constant flow of patients between the entrance, clinic reception and waiting areas, and the consulting rooms, Characteristics of a good OPD are:

a. For patients

(i) a well-designed clinic reception;
(ii) clear and simple directions and circulation routes;
(iii) a well-organised and efficient appointments system;
(iv) privacy and dignity are ensured at all times;

(v) uninterrupted consultation with the doctor;
(vi) easy access to treatment facilities and WCs;
(vii) easy access to telephone facilities.

b. For doctors

(i) patients ready for consultation, with their casenotes immediately available;
(ii) accommodation which will enable consultation and examination to take place in privacy;
(iii) access to diagnostic and treatment facilities;
(iv) sufficient storage for equipment.

c. For other staff

(i) good visual contact with waiting patients;
(ii) controlled handling of patients' records to maintain confidentiality.

Specialty clinics

3.8 The principles and many of the requirements for a general OPD apply equally to a number of specialty clinics, and consequently dedicated accommodation should be kept to a minimum. A standard consulting and examination room in a general purpose OPD may be used for specialty clinic purposes by:

a. the use of the room as it is;

b. bringing special equipment into the room for the period of a clinic; a nearby store will be required for such equipment;

c. fixing equipment, provided that the room can still be used for other specialty clinics.

Standard rooms used by as many people as possible will result in a compact and economical department. Wherever possible, specialty clinics should be integrated with general out-patients facilities to form a comprehensive OPD.

3.9 Orthopaedic clinics need to accommodate patients and their escorts; many of these patients will be on crutches, or in wheelchairs, or on stretchers. Waiting spaces must reflect these factors. Easy access to plaster facilities is essential.

3.10 Guidance for a chiropody room is provided in this HBN. (See paragraphs 4.33–4.35.) If other special rooms are required (eg for dentistry), refer to the relevant building and design guidance. (See paragraph 1.7.)

Signposting

3.11 The OPD should be clearly signposted from the entrance(s) to the hospital site, from the car park, and from the main entrance to the hospital. All signs should be at a level which will prevent them from being obscured by cars and other vehicles, and should be illuminated after dark.

3.12 Directional signs should be provided identifying all routes which patients and escorts may need to follow both within the department and to other departments.

3.13 All signposting must be clear, as simple as possible, easily understood and self-explanatory. Most patients should be able to find their way without having to ask for directions.

3.14 Relevant guidance will be found in HBN 40 'Common Activity Spaces (Volume 2)—Corridors', and in HTM 65 "Signs".

Staff facilities

3.15 The provision of suitable staff facilities is an important feature in the efficient functioning of an OPD. Because of the continuous pressure of work, it is essential to provide adequate rest facilities. A staff room, changing facilities and WC are needed (see paragraphs 4.43 and 4.49). Changing facilities may be provided either centrally, zonally or locally. To afford adequate privacy for staff, the rest facilities should be sited away from the patient and waiting areas.

3.16 Office accommodation for the OPD manager and for the Sister is required (see paragraphs 4.44 and 4.45).

Security

3.17 Assaults on hospital staff and theft of NHS property are recognised problems. The project team should discuss security with the officer in charge of the local Police Crime Prevention Department and the hospital or district security officer or adviser at an early stage in the design of the building. Fire and Security Officers should be consulted concurrently because the demands of security and fire safety may sometimes conflict. Attention is drawn to Circular HN (84) 26, dated December 1984, (in Wales, Circular WHN(85)1) about Security, and the NHS Security Manual issued with the Circular.

3.18 Where violent incidents are foreseeable, employers have a duty under Section 2 of the Health and Safety at Work Act to identify the nature and extent of the risk and to devise measures which would provide a safe workplace and a safe system of work. Such measures should reflect the guidance given in the Health Service Advisory Committee report 'Violence to staff in the health services', issued in 1987. For example, careful attention should be given to:

a. the design of reception points and waiting areas;
b. access to pay-phones;
c. ease of visual contact with colleagues;
d. personal alarms and the location of panic buttons.

Materials handling

3.19 Supply, storage and disposal must be thought of as an entity. Supplies must enter the department, be stored, consumed or employed and thereafter removed for disposal (or, in some cases, re-cycling). Operational policies and building design are closely linked and project teams should carefully consider the following issues:

a. Whole Hospital materials handling policies and control procedures, bearing in mind the range of stores in the department;
b. the several kinds of items supplied, eg sterile supplies, office supplies and clean laundry;
c. the delivery point(s);
d. the location and volume of storage spaces;
e. specialised storage requirements, for example, pharmaceutical supplies, especially Controlled Drugs;
f. arrangements for disposal, which should ensure that materials awaiting collection do not overspill into corridors.

Communications

3.20 The provision of an effective communications system is necessary for the efficient management of an OPD. Communications requirements can be considered in four main categories—telephones; intercommunications; patient/staff call; and alarms. (See Chapter 6.)

Telephone services

3.21 Prompt internal communication between the general enquiry desk, the clinic reception desks and the health records department will be required. This is achieved with modern (electronic) telephone equipment and there should be no justification for the provision of separate intercommunication systems for this purpose.

3.22 Project teams may wish to consider the possibility of providing direct dialling in (DDI) for out-patients appointments. All provision for telephones should be in accordance with local Whole Hospital communications policy. Guidance concerning hospital telephone services is given in HBN 48—'Telephone services'. Guidance concerning the location of payphones for patients is contained in HBN 51—'Main entrance to a District General Hospital' (in preparation).

Data transmission

3.23 Project teams will need to consider the provision, either initially or eventually, of data links in accordance with the Whole Hospital data transmission and handling policy. (See paragraph 5.23.) It is anticipated that, as a minimum, data links will be required between the hospital computer, the general enquiry desk, and clinic reception desks.

Next patient call system

3.24 Most patients in the clinic waiting area are called by name by the nurse or clinic receptionist. Special consideration needs to be given to calling patients with an auditory or visual handicap. (See also paragraph 6.71).

Patient/Staff calls

3.25 Provision will be needed for patient to staff calls from patients WCs, and staff to staff calls from patients WCs and from treatment areas. (See paragraphs 6.66–6.70.) In addition, the staff location system employed in the hospital should be extended to give adequate cover to this department. (See paragraph 6.72.)

Controlled Drugs cupboard and alarm

3.26 If a Controlled Drugs cupboard is required, it should be located in the clean utility room and provided with alarms which comply with the requirements of HC(77)16. (See paragraph 6.53.)

Internal environment

3.27 The internal environment of an OPD should reflect the needs of patients, their escorts and staff. Waiting spaces should be welcoming, pleasant, well-illuminated and relaxing, and should have as much natural light and ventilation as possible. An excessively clinical appearance should be avoided. Colours, wallpapers and furniture should be carefully chosen. Waiting and circulation areas should be carpeted. Views to outside areas are essential.

Natural and artificial lighting

3.28 A light and pleasant interior is required with an adequate level of illumination that can be varied to suit functional activities. Because natural lighting is variable in quality and quantity, the provision of a comprehensive artificial lighting installation is essential.

3.29 The orientation of accommodation is an important consideration in any building scheme. Sunlight within a building enhances colour and shape and helps to make a room bright and cheerful. Glare should be minimised and may be controlled by curtains and blinds. Solar gain can be mitigated by external screens or by architectural detailing of the shape of windows and depth of reveals. (See HTM 55 'Windows', section 2.2.)

3.30 Artificial lighting should be capable of providing the required levels of illumination at all times. It also has an important contribution to make to the aesthetic appeal of the interior. The design should provide task lighting of the required intensity with low-contrast glare-free background illumination. Clinical areas will require the use of approved colour rendering light sources.

Noise and sound attenuation

3.31 Any unwanted sound is a noise. Rooms where consultations, diagnostic and clinical procedures take place should be sited so that they are not affected by external or internal noise. This will apply particularly to consulting, examination and treatment rooms.

3.32 Many confidential and personal interviews take place in an OPD. Careful attention should be paid to sound attenuation of partitions in rooms where these will be held.

3.33 Excessive sound insulation treatment may be avoided by careful planning. Noise-sensitive areas should be located as remotely as possible from the sources of unavoidable noise. Where necessary, sound transmission may be reduced by sound containing partitions and doors.

3.34 Noise reduction in a space can be assisted by the use of soft floor coverings, curtains and acoustic treatment of walls and ceilings, where this is hygienically acceptable.

Windows

3.35 Clear glazing, providing an outlook for patients and staff, should be provided in as many spaces as possible, but privacy in consulting and examination rooms, and in treatment rooms must be maintained. Windows should be easy to clean, both on the inside and on the outside. Other aspects which need to be considered are illumination and ventilation, thermal loss or solar gain, energy conservation, the prevention of glare and the provision of a visual link with the outside. Guidance on types of window and on safety aspects is given in HTM 55 'Windows'.

4 Specific Functional and Design Requirements

Introduction

4.1 This Chapter provides guidance on the functional requirements and design implications for each of the activity spaces in the OPD.

4.2 Lists of activities and equipment and details of environmental conditions and finishes of walls, floors and ceilings are all identified in Activity Data sheets (Chapter 8). Reference should also be made to the relevant Health Technical Memoranda covering Component Data. (See paragraph 5.33.)

Description of accommodation

4.3 The guidance in the following paragraphs is based upon the flow pattern shown in Diagram 1.

Enquiry point inside OPD

4.4 An enquiry point should be located immediately at the entrance to the department. Depending upon the size of the department, it will need to be manned by one, or two, staff, whose main functions will be dealing with general enquiries from patients (both in person and on the telephone), appointments, and the payment of travelling expenses. Space will be required for computer terminals. Staff based at the desk may need to discuss personal details with the patients and the design should achieve a satisfactory level of privacy.

4.5 A signboard at this point indicating locations of current clinic sessions, including specialties, names of doctors, starting times and identity of clinic suites, will be helpful to patients and will reduce the number of enquiries. (See HTM 65—'Signs')

Children's play area and push-chair parking space

4.6 A play area for children accompanying adult patients should be provided. Young children should be able to play or read in safety without disturbing adult patients. The location of the play area should facilitate easy supervision by voluntary workers, hospital staff or other adults. If possible, there should be access to a suitable outside play area. (See HBN 45—'External works for health buildings' (in preparation). Nappy changing facilities should be provided near to the childrens play area. A small parking space or store for push-chairs should be provided.

Clinic suites

4.7 For the purposes of this Note, a clinic suite is defined as a number of combined consulting and examination rooms which can be operated singly, or together, in conjunction with an associated clinic reception desk and clinic waiting area.

4.8 It is helpful to both patients and staff if the entrances to clinic suites are visible from the entrance to the department; in accommodation where this is not possible, the means of access should be clearly signposted. Clinic suites to be used for handicapped patients, (for example, those attending eye and orthopaedic clinics), should generally be accommodated as near as possible to the entrance.

4.9 The number of consulting and examination rooms used in a clinic session varies with the specialty and the method of working. A doctor may consult alone, using only a single room, or two or three doctors may run a clinic and need five or six rooms. The layout of clinic suites should permit the use of consulting and examination rooms under different working arrangements.

4.10 Consulting and examination rooms will normally be served by one receptionist and one clinic waiting area. It is possible that in large clinics, two reception points may be necessary.

Clinic reception desk

4.11 A reception desk should be provided for each clinic suite. It should be located with the clinic waiting area and be adjacent to consulting and examination rooms. The receptionist should easily be able to see patients waiting, and should have oversight of as many consulting and examination rooms as possible.

4.12 Space will be needed for the following activities, some of which will need to be carried out in privacy:

a. receiving and registering of patients upon arrival;

b. making re-appointments and appointments with other clinics;

c. temporary storage of health records, usually on a trolley, for the duration of the clinic session;

d. use of telephones and computer terminals.

Clinic waiting area

4.13 The clinic waiting area should be close to the clinic reception desk and be within easy distance of the consulting and examination rooms. It should have a relaxing atmosphere and have a variety of seating. There must be no seating immediately outside a consulting and examination room. A variety of reading material should be available. Adequate space is needed for wheelchair patients.

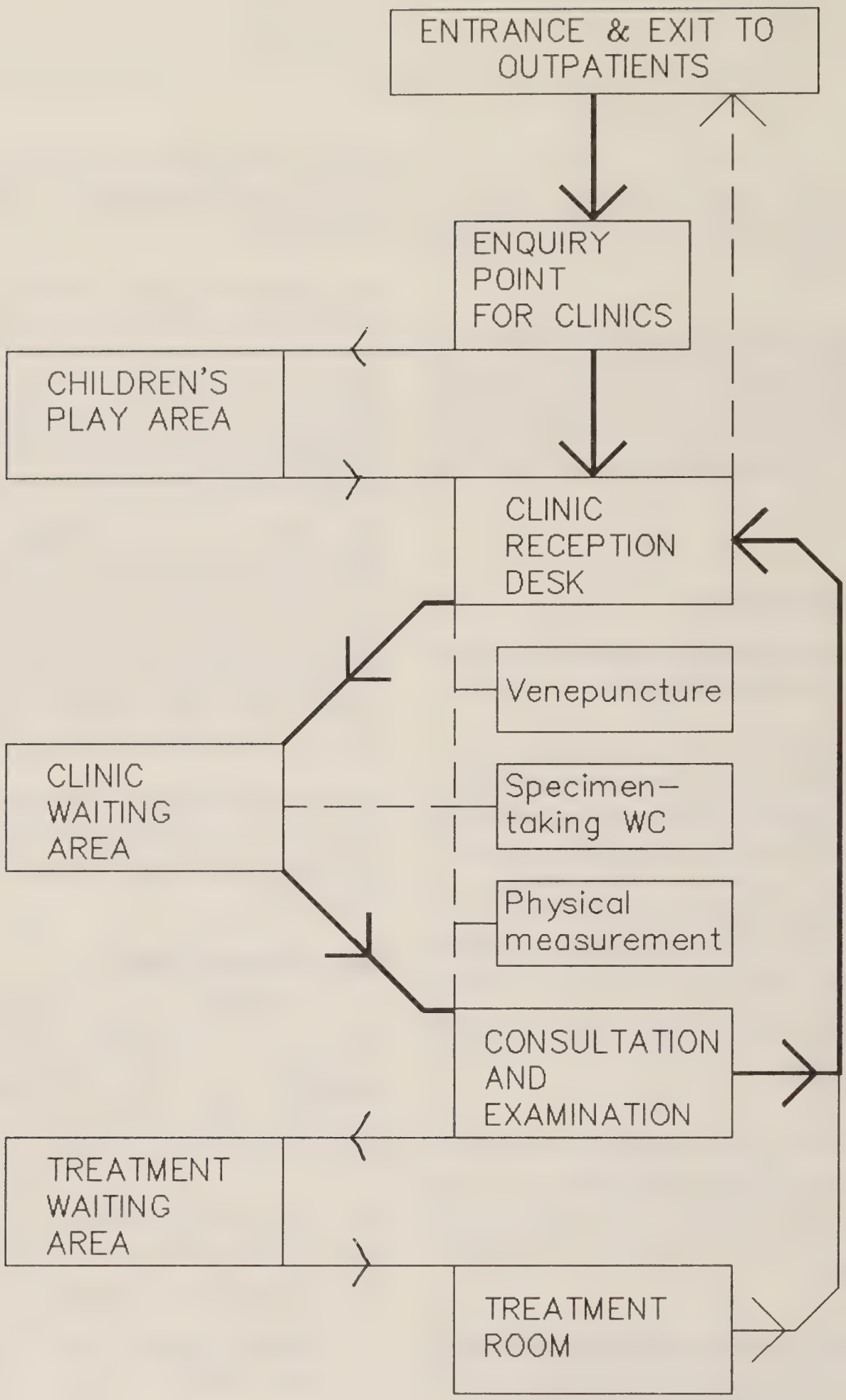


DIAGRAM 1

PATIENT FLOW PATTERN
IN OUTPATIENTS DEPT.

Childrens play area

Clinic reception

WC facilities should be available nearby. (See paragraph 4.56.)

4.14 The size of the clinic waiting area is affected by:

a. the number of patients attending the clinics;

b. the number of escorts and where they wait;

c. the number of patients in wheelchairs.

An efficient appointments system should be assumed when planning the size of the waiting area.

4.15 A clinic waiting area should not be oversized merely to cope with the occasional build up of patients. Locating two clinic waiting areas adjacent to each other may facilitate overspill arrangements by allowing shared use. A large space may be broken down into small units by the skilful arrangement of seating and by indoor planting.

4.16 In areas to be used for orthopaedic clinics, most patients are likely to be physically disabled, using crutches, and fitted with splints etc. Care should be taken to allow for this in planning the size of the clinic waiting area.

4.17 Project teams may wish to consider the provision of low level background music and/or a video system. This may help patients to relax, alleviate the boredom of waiting, particularly for children, and mask confidential discussions.

Physical measurement

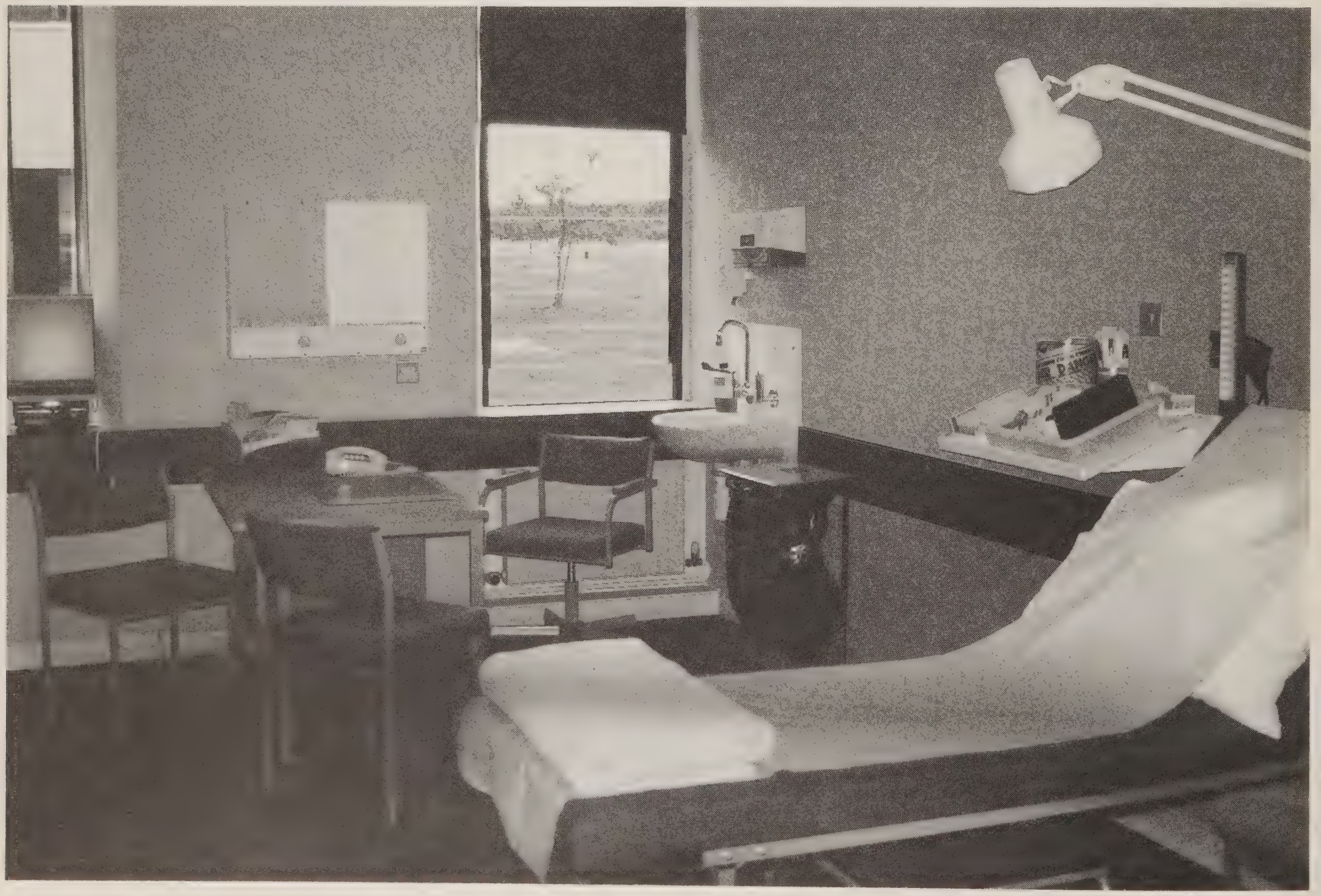
4.18 It is often necessary for out-patients to be weighed and measured. This is usually carried out prior to the consultation/examination, and a small space is required where this can take place in privacy, and the results recorded. The facility should be provided close to groups of consulting and examination rooms and the related waiting area. Provision should be made for a mobile weighing chair so that some patients can be weighed in the privacy of the consulting/examination room if necessary.

Combined consulting and examination rooms

4.19 This Note has been prepared on the basis that the combined consulting and examination room is preferable to separate consulting rooms and examination rooms. The combined room facilitates unbroken consultation and examination and, if there is only one door, greater acoustic privacy is achieved. The combined room has greater flexibility in use, as it may be used for either consultation, or examination, or it may be used for both. The provision of combined rooms also simplifies the present and future allocation of rooms to doctors for particular clinics.

4.20 A standard consulting and examination room should be large enough to accommodate a doctor, a nurse, a patient (who may be in a wheelchair), and a patient's escort.

4.21 The room will be used for consultation, examination, taking and recording of blood pressure, and for



Combined consulting/examination room

minor diagnostic and treatment procedures. Space is needed for a desk and chairs, and an examination couch, screened by curtains. There should be sufficient space within the curtained area for a patient to undress/dress in privacy, with assistance when required. The examination couch should be accessible from both sides. Space is needed for a mobile adjustable inspection lamp. Clinical handwash facilities are required.

4.22 The layout of the room should ensure maximum privacy, especially when the door is opened. Although communication doors between adjacent consulting and examination rooms may facilitate the movement of staff, their use intrudes upon both the patient's privacy and the consultation, so they are not recommended. If they are provided, such rooms must not be used as a general traffic route.

4.23 Standard consulting and examination rooms can be used by a wide range of specialties. They should not be used routinely as offices, although they can be allocated, for example, as a base for a social worker for the period of a clinic.

Consulting rooms with separate examination rooms

4.24 Consulting rooms with adjacent examination rooms may be justified for some clinics, but do not provide the flexibility of combined consulting and examination rooms because each is permanently committed to a single purpose. They also limit the number of clinics which can be undertaken in the same overall area.

4.25 Diagram 2 illustrates the comparative space utilisation in the choice of provision of either combined consulting/examination rooms, or consulting rooms with adjacent separate examination rooms. Diagrams 3 and 4 illustrate alternative clinic suite arrangements using a group of six combined consulting/examination rooms and their flexibility of use.

Support services

4.26 Various services are routinely required within an OPD in support of the activities of consultation and examination and the accommodation needs for these are described below.

Treatment waiting area

4.27 Depending upon the design solution, a small waiting area for up to 10 persons may be required in the vicinity of the treatment facility.

Treatment facility

4.28 Investigations and treatments which are not appropriate to the consulting and examination rooms, and which do not require use of the acute day patient accommodation, will be carried out in the treatment facility in the OPD. This facility will be used during clinics as required and the level of provision will depend upon the size of the department and the local practice for conducting clinical investigations and treatments.

4.29 To ensure visual and auditory privacy, the treatment facility should be divided by partition walls into two treatment rooms and a preparation area. The treatment facility is intended to be used by most clinical specialties, and for a variety of routine clinical procedures and treatment. These will be carried out in the rooms with the patient lying on an examination couch or trolley, or sitting in a chair. Access to the patient is required from all sides, and space is needed in each room for parking a dressing trolley, a mobile examination lamp, and a wheelchair. Each room will require clinical hand washing facilities.

4.30 Certain clinical procedures require the use of cryosurgical equipment. This equipment may utilise either liquid nitrogen, liquid carbon dioxide, high pressure carbon dioxide, or high pressure nitrous oxide. When high pressure nitrous oxide is used, the gaseous exhaust should not be permitted to discharge freely into the atmosphere of the treatment room but should be connected into a purpose-installed exhaust pipe. This pipe may be terminated in a non-recirculating extract ventilation duct or at a suitable external high-level position where it is protected against back pressure from adverse wind effects and located to avoid re-introduction of the exhaust gases into the building through air intakes and windows.

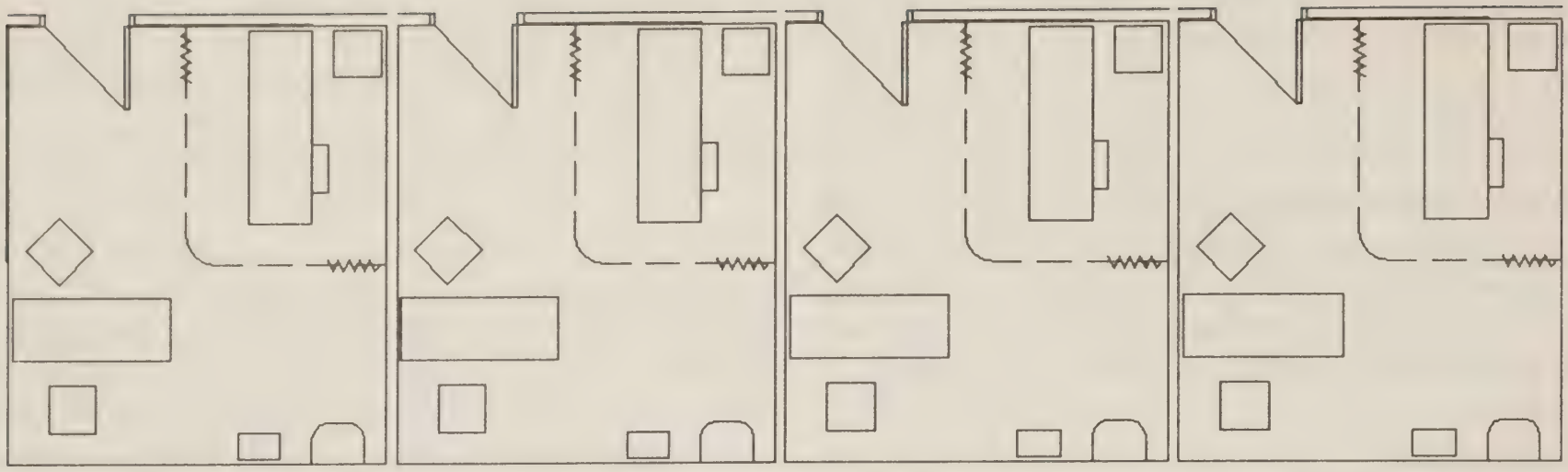
4.31 Outside the room, but within the treatment facility, there should be a preparation area where sterile packs, lotions and drugs for immediate use are stored, and where trolleys are prepared. A work surface is required.

4.32 The treatment facility should be positioned between the clean and dirty utility rooms with direct access for staff to each from the preparation area. (See Diagram 5.) It requires mechanical ventilation to control the movement of air to or from other areas.

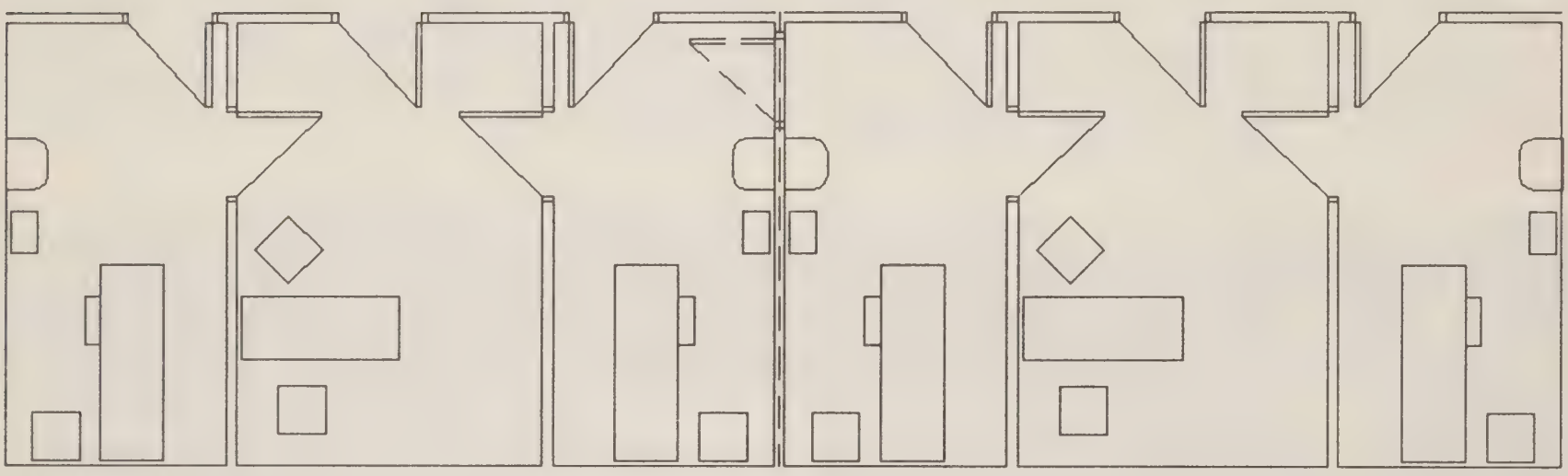
Clean utility room

4.33 A clean utility room should be located adjacent to the treatment preparation area and have direct access to it. Provision is required for the preparation and storage of all drugs, medicines and lotions, and for a working supply of clean and sterile supplies, and the preparation of trolleys for the clinics. The Controlled Drugs cupboard may be located here. A clinical hand-wash basin is required.

Clean utility



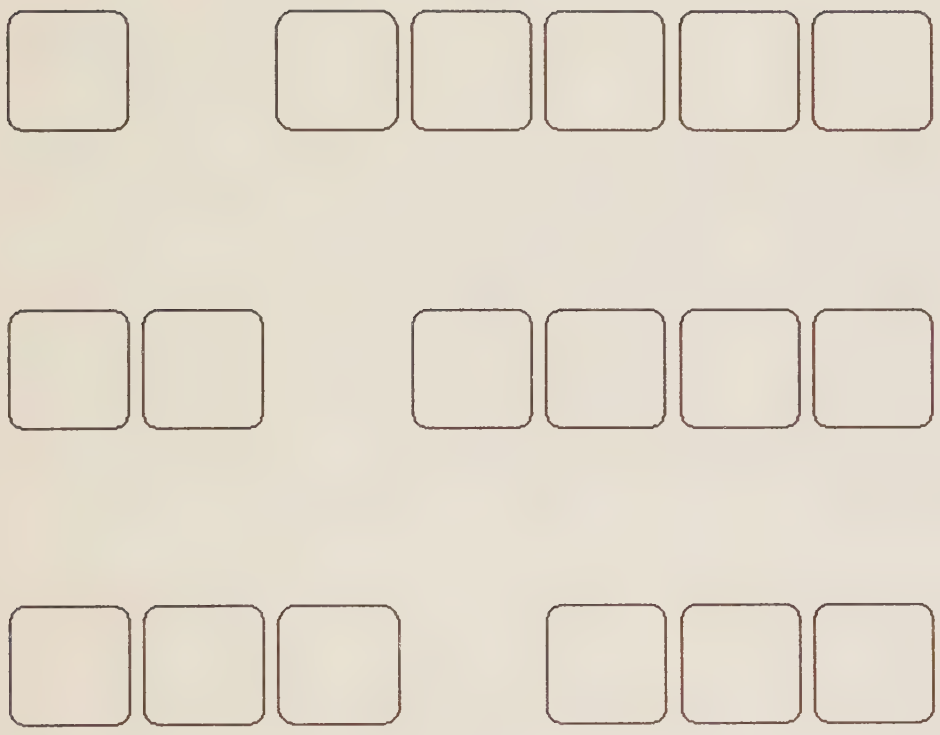
EXAMPLE A: 4 Consulting and Examination Rooms
Range of Use: 1–4 doctors
1–4 clinic sessions



EXAMPLE B: 2 Consulting and 4 Examination Rooms
Range of Use: 1–2 doctors
1–2 clinic sessions

DIAGRAM 2

EXAMPLES SHOWING COMPARATIVE SPACE UTILISATION IN CHOICE OF PROVISION OF CONSULTING/EXAMINATION ROOMS



NUMBER OF ROOMS	EXAMPLES OF TYPES OF CLINICS
1	PAIN
5	GENERAL MEDICINE
2	ANTI-COAGULANT
4	CARDIOLOGY
3	ORTHOPAEDIC
3	DERMATOLOGY
1	PSYCHIATRIC
2	NEUROLOGY
3	GENERAL SURGERY
6	DIABETIC GENERAL SURGERY GENERAL MEDICINE

DIAGRAM 3

ALTERNATIVE CLINIC SUITE ARRANGEMENTS USING A GROUP OF 6 COMBINED CONSULTING/ EXAMINATION ROOMS

THE ROOMS MAY BE USED FOR COMBINED CONSULTING/EXAMINATION PURPOSES OR ONLY CONSULTATIONS OR EXAMINATIONS.

EXAMPLE OF TYPE OF CLINIC	USE OF ROOMS	NUMBER OF ROOMS	NUMBER OF DOCTORS
PAIN	C/E	1	1
NEUROSURGERY	C/E C/E	2	2
ANTI-COAGULANT	C E	2	1
ORTHOPAEDIC	E C E	3	1
DERMATOLOGY	C E C/E	3	2
GENERAL SURGERY	C/E C/E C/E C/E	4	1
GENERAL SURGERY	C E E C/E C/E	5	2-3
DIABETIC GENERAL MEDICINE	C E E E E C	6	2

DIAGRAM 4

FLEXIBILITY OF USE OF COMBINED CONSULTING/ EXAMINATION ROOMS

THE COMBINED FACILITY ALLOWS FLEXIBILITY OF USE AS A C/E ROOM, CONSULTING ROOM OR EXAMINATION ROOM.
SEPARATE CONSULTING ROOMS WITH EXAMINATION CUBICLES ARE BY DEFINITION LIMITED TO SINGLE PURPOSE USE.

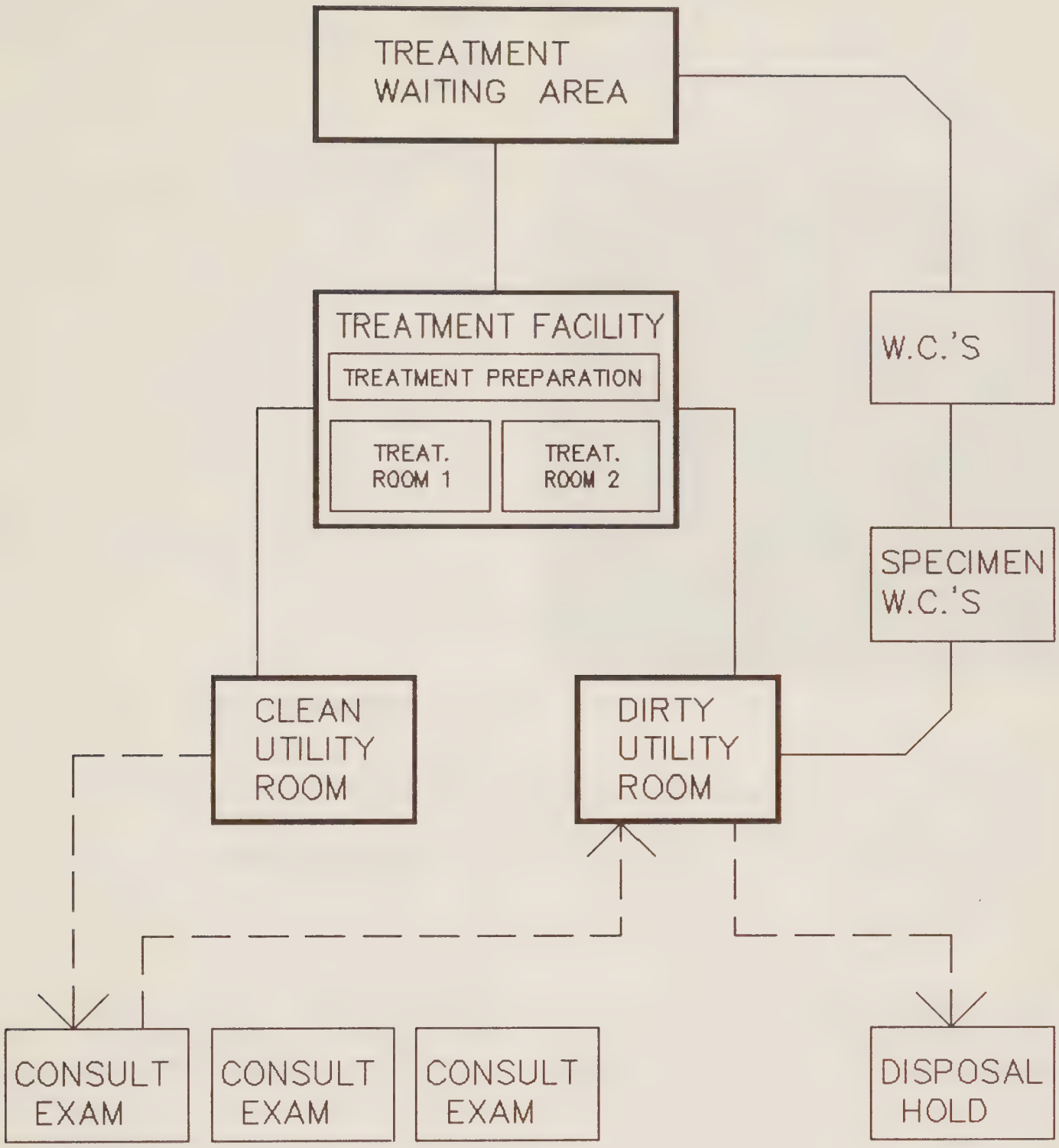


DIAGRAM 5

RELATIONSHIPS BETWEEN TREATMENT FACILITIES AND UTILITY ROOMS/SPACES

Dirty utility room

4.34 A dirty utility room should be located with direct access from the treatment preparation area. Specimens may be passed through a hatch from the adjacent WC. Facilities are required for testing specimens of urine and recording results, and for the disposal of liquid waste. Provision is needed for the cleaning of dressing trolleys and other items of equipment, and for the temporary holding of items requiring reprocessing or disposal. A combined disposal unit with worktop will be needed. Clinical hand-wash facilities are required.

Dirty utility

Chiropody waiting area

4.35 Depending on the design solution, a small waiting area for up to ten persons may be required in the vicinity of the chiropody room. Shared use of the treatment waiting area may be appropriate.

Chiropody room

4.36 A room is normally required for chiropody. It should be large enough to accommodate a chiropodist, a chiropody aide and a patient who may be in a wheelchair. Mechanical ventilation should be provided to control the diffusion of odours.

4.37 Space is needed for an electro hydraulic reclining chair, and for the parking of a chiropody treatment unit and other equipment. Space is required to hold in-use fluids, instruments and clean and sterile supplies. A work surface is needed. There should be an adjustable examination lamp. A desk, chair and small filing cabinet are required. Clinical hand-wash facilities must be provided.

4.38 A curtained cubicle should be provided to enable patients to undress and dress in privacy. The cubicle should be fitted with grab-rails.

Chiropody store

4.39 A lockable store will be required for small instruments and supply items.

Venepuncture

4.40 Facilities will usually be required in the OPD for the taking and testing of blood specimens. The location of these facilities will be a matter for local decision. Ease of access from the clinic suites is required. If large numbers of patients are referred from GPs, a location close to the entrance to the OPD will be preferable.

Venepuncture waiting area

4.41 Depending on the referral pattern and the design solution, a waiting area for up to 15 persons should be provided. A small reception point may be required but often a numbered ticket apparatus can be used to call patients.

Venepuncture cubicles

4.42 Blood specimens will be taken in cubicles by trained phlebotomists. A group of three cubicles will usually be adequate for most sizes of OPD, but the number of cubicles will be determined by project teams in the light of the number of referrals by GPs. Each cubicle will accommodate one sitting patient and a phlebotomist. Clinical hand-wash facilities are required in each cubicle. One cubicle should be suitable for a wheelchair patient, and one should contain an examination couch in case it is necessary for a patient to lie down. Space will be needed for portable analytical equipment as some analyses will take place there. Storage facilities for sterile items etc is required.

Staff facilities

4.43 The staff facilities required in the OPD are described in paragraphs 4.44–4.49. (See Diagram 6).

OPD Manager's office

4.44 An office is required within the department for the OPD Manager.

Sister's office

4.45 An office, similar to that for the OPD Manager, is required within the department for routine office work, for interviewing, and for discussion with staff.

Appliance clerk's office

4.46 An office for routine office work, interviewing and discussions is required. In a department with a high surgical appliance workload, an office for two or three staff may be needed. The office should be located as close as possible to the consulting and examination room which the visiting appliance fitter will use. For the appliance clerk's store, see paragraph 4.55.

Interview room

4.47 A room where patients and relatives can be interviewed in private should be provided in a quiet location of the department. Semi-easy chairs and a desk space for one person are required.

Office for visiting staff

4.48 A standard office should be provided for multi-purpose use by visiting staff. It should not be allocated to

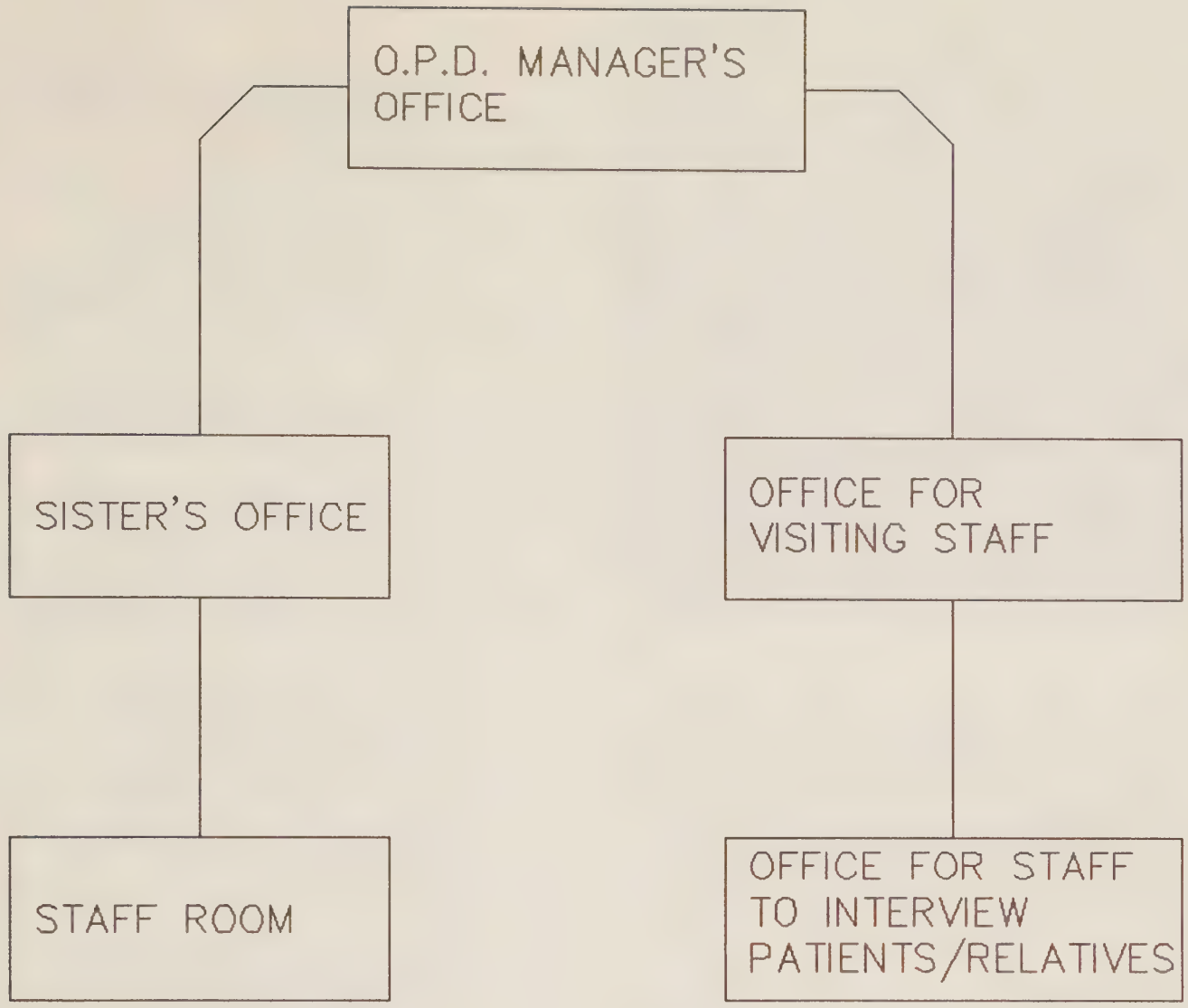


DIAGRAM 6

STAFF FACILITIES IN AN OUTPATIENTS DEPARTMENT

a particular person or discipline but made available as required on a sessional basis to a wide range of personnel, such as community psychiatric nurses (see HBN 35—'Accommodation for people with acute mental illness'), social workers, dietitians, and health visitors (see HBN 18—'Office accommodation in health buildings').

Staff room

4.49 A room is needed where staff can sit and relax during breaks. Semi-easy chairs are required. Beverage-making and washing up facilities are needed, with storage for a small amount of crockery. Lockers should be provided for the storage of small items of personal belongings. Hand-washing facilities are required.

Storage

4.50 Diagram 7 illustrates the storage requirements in an OPD.

General supplies store

4.51 A back-up store specifically for sterile supplies, such as bulk dressing packs, syringes and needles, will be required to supplement supplies held in the clean utility room and working supplies held in individual spaces within the department. Suitable storage for bulk items should be provided. A linen exchange trolley can be stored here, and a general purpose trolley, and spare wheelchairs, may be parked here.

General equipment store

4.52 An equipment store located with easy access to the consulting and examination rooms and treatment rooms is required for the storage of mobile and loose items of medical equipment. Floor space where mobile equipment can be parked, and shelving for storage, is required.

Clinic store

4.53 Local storage for small supply items and equipment is required within each clinic suite.

Stationery store

4.54 A store is required for items of stationery.

Appliance clerk's store

4.55 Space is required for the storage of surgical appliances delivered to the department and awaiting a fitting session. The store should be lockable. Ideally, this store should be located close to the appliance clerk's office and the consulting and examination rooms used by the appliance fitter.

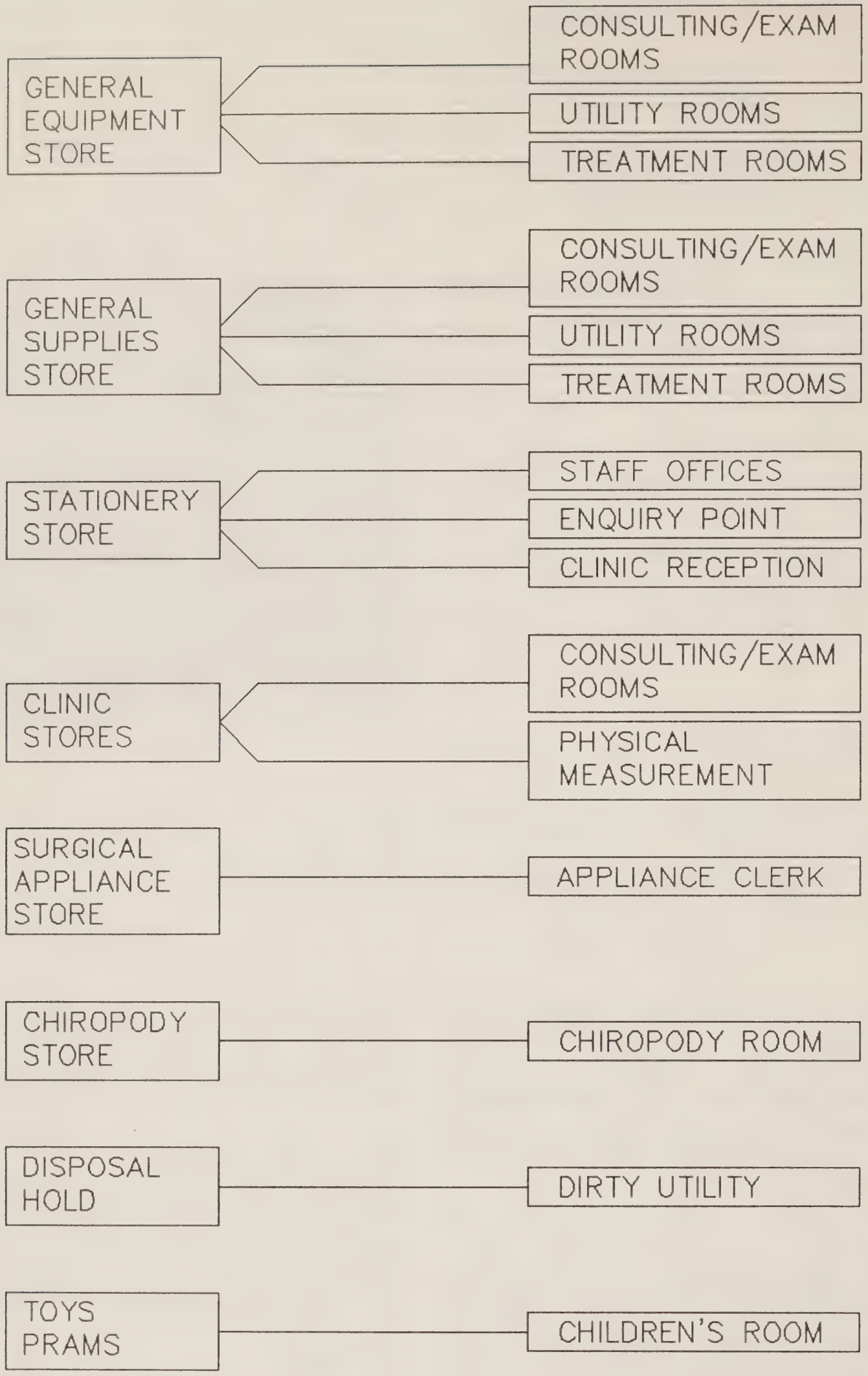


DIAGRAM 7

STORAGE REQUIREMENTS IN AN OUTPATIENTS DEPARTMENT, SHOWING TYPES OF STORE AND THE ROOMS THEY SERVE

WCs

Patients, escorts and staff

4.56 WC facilities should be easily accessible from each clinic waiting area. Each WC must have hand-washing facilities.

WC (Specimen)

4.57 Two WCs should be provided with hatches, for specimen collecting in the dirty utility room. One of these WCs may be the one designed for wheelchair patients. They should be easily accessible from at least one of the clinic waiting areas and conveniently located for all the others.

Nappy changing facilities

4.58 Nappy changing facilities are required near to the children's play area. (See paragraph 4.6)

Ancillary accommodation

Cleaners space

4.59 Domestic services staff provide the immediate day-to-day cleaning service from this room. It should provide storage for cleaning materials and equipment in daily use, and facilities for the various activities undertaken.

Disposal holding

4.60 The disposal of used items (depending on Whole Hospital policy) is likely to be in bags. A room is required for the temporary holding of bags. It should be provided at the entrance to the department, within easy reach of the main hospital street.

Switchroom or cupboard

4.61 The departmental electrical supply will be to a switchroom or cupboard suitably identified and located to minimise the cost of both the main and sub-circuits necessary. The switchroom or cupboard should house the main isolators, distribution equipment etc and be designed to permit ease of operation and maintenance, and be capable of being locked to prevent unauthorised interference.

Plaster facilities

4.62 Orthopaedic clinics will normally use the standard clinic reception and waiting facilities and combined consulting and examination rooms in the OPD on a sessional basis. The special facilities required for plaster application and removal are:

a. Plaster room waiting area
As only a small number of patients will need to wait for the plaster room, patients may wait in an adjacent clinic waiting area, for example the one also used by patients attending orthopaedic clinics;

b. Plaster room
This should be located near the main hospital street as some patients will arrive on beds from the wards. The room should contain two curtained cubicle areas, each with a couch. One should have a ceiling suspension position. Space to work all round the couch is required.

Plaster facilities

Sufficient space is needed for manoeuvring a bed within the room and for a patient to be transferred from a bed on to an examination couch. Each cubicle should have space for a plaster application trolley, a wall-mounted X-ray viewer, stools and sack stands, and one wall-mounted long mirror. A plaster sink, work surface and storage for tools may be shared between the two spaces. One clinical hand-wash basin is required. Mechanical ventilation should be provided to control odours and plaster dust;

c. Plaster room stores
Storage space is required within the plaster room for Plaster of Paris and other compounds (eg fibre glass) used for making splints, and for bandages, theatre-type boots, equipment and instruments. Provision of two stores would facilitate segregation of items. Temperature control may be necessary in one of the stores if heat-sensitive materials are in use;

d. Crutches and splint store
Provision is required for the storage of walking aids such as crutches and splints.

e. Office (plaster room)
A small en-suite office is required for plaster room staff where clerical activities and confidential discussions can take place. Telephone facilities will be required.

5 Environmental and Other Topics

Introduction

5.1 This Chapter contains guidance concerning aspects of function and design which are common to health buildings generally and which will need to be borne in mind when designing new buildings or up-grading existing premises.

Statutory and other requirements

5.2 Health Circular HC(88)60 (in Wales, WHC(89)20) advises health authorities that their building schemes should comply with the requirements of building legislation, even where these are not legally enforceable against authorities, and with all other relevant codes of practice and standards. It also requires authorities to ensure that they have adequate procedures to ensure compliance. Attention is also drawn to HC(86)14 (in Wales, WHC(87)7), concerning Food Hygeine and Pest Control in the Health Service. This Note takes account as far as possible of all statutory and other requirements currently in force, but health authorities are reminded of their responsibility for ensuring compliance with statutes, regulations, codes and standards.

Upgrading or adaptation of existing buildings

5.3 The standards set out in this guidance essentially apply to the provision of accommodation by new building and it is not intended that they should be applied retrospectively to existing stock. However, the principles are equally valid and should be applied, so far as is reasonably practicable, when existing accommodation is being upgraded or new accommodation is being constructed within an existing building, which may previously have been used for other purposes.

5.4 The cost of upgrading work should conform to the guidelines indicated in the Department's WKO letter (81)4—(AWO(81)8 in Wales). Those guidelines take into consideraton the estimated life of the existing building and the difference in cost between upgrading a building and new building.

5.5 Before any decision is made to carry out an upgrading project, consideration must be given to the long-term strategy for the service, the space required for the new service, and the size of the building. Regard must also be paid to the orientation and aspect of the building and the adequacy and location of all necessary support services.

5.6 If there emerges a prima facie case for upgrading, a thorough analysis of all functional and physical conditions of the existing buildings should be undertaken.

5.7 When comparing the cost of upgrading or adapting an existing building with that of a new building, in addition to the building cost, due allowance must be made for the cost of relocating people, demolition and salvage costs, disruption of services in a phased project, and the temporary effects on running costs of any impaired functioning of areas affected by upgrading.

5.8 The check of physical and other aspects of existing buildings should include:

a. availability of space for alterations and additions;

b. type of construction;

c. insulation;

d. age of the buildings, condition of fabric eg external and internal walls, floors, roofs, doors and windows, which may be determined by a condition survey;

e. life expectancy and adequacy of engineering services, ease of access and facility for installation of new wiring and pipework, if required;

f. the height of ceilings (high ceillings do not necessarily call for the installation of false ceilings, which are costly and often impair natural ventilation);

g. changes of floor levels to obviate hazards to disabled people;

h. fire precautions;

j. physical constraints to adaptation such as load-bearing walls and columns.

5.9 Having decided that existing premises are suitable for upgrading or conversion, the main requirement will be to assess how best the accommodation can be adapted so as to facilitate the practice of modern care.

5.10 The main environmental factors which should be considered are the same as for new building.

5.11 Upgradings must conform to current fire safety and other statutory regulations. It is very difficult to estimate the fire resistance of floors, walls and doors of existing buildings.

5.12 This summary of the main aspects of upgrading is general in character and it is recognised that each upgrading project will present its own individual problems. In many instances compromises may have to be made between Building Note standards and what it is possible to achieve. Upgradings should be functionally sound—not merely cosmetic—and appropriate for the projected needs of patients and staff for a number of years to come.

Fire precautions

5.13 It is essential that project teams familiarise themselves with the guidance contained in the FIRECODE series of documents which together give the Department's policy and technical guidance on fire precautions in hospitals and other NHS premises. In particular, the need for structural fire precautions and means of escape from the whole accommodation must be taken into account at the earliest possible planning stage. The key document for these aspects in hospitals is FIRECODE: 'Fire precautions in new hospitals', Health Technical Memorandum 81.

5.14 In addition, basic policy, principles and key management guidance are contained in FIRECODE: 'Policy and Principles'. Other FIRECODE documents include the Health Technical Memoranda '80' series (which give technical guidance on various building, engineering and equipment issues), the Fire Practice Notes series (dealing with various specialist aspects of fire precautions) and Nucleus guidance. Existing HTMs will, in due course, be reissued in FIRECODE format. The series includes FIRECODE: 'Directory of Fire Documents' which lists references to relevant legislation and to relevant fire precautions guidance issued by the Department of Health, and other sources, for example, the Home Office.

5.15 FIRECODE and publications in the HTM '80' series are listed in the Bibliography at the end of this Note.

5.16 It is important to establish during the design stage those aspects of fire safety strategy which affect the design, configuration and structure of a project. At appropriate stages of the design process, the architect and engineer should discuss and verify their proposals with the local fire authority, and ensure that the project team and all other planning staff are fully acquainted with the fire safety strategy for the design in terms of operation (staff responsibilities, etc), equipment provision, and buildings and engineering layouts. Health Technical Memoranda 57, 58, 59 and 60 give detailed information on the selection of fire resisting componants.

5.17 The principles of fire safety apply equally to new projects and to alterations and upgrading of existing buildings.

Smoking

5.18 Health Circular HC(85)22 dated May 1985—WHC(85)31 dated June 1985 in Wales—provides guidance about smoking on health premises. While recognising that the responsibility for determining local policies rests with the health authority, the circular recommends that smoking should be restricted as far as is practicable and, where it is permitted, confined to specially designated areas which are clearly signposted. In such areas, ventilation should be sufficient to prevent discomfort to non-smokers and the spread of odours to other areas of the premises.

Damage in health buildings

5.19 When designing and equipping health buildings, the likely occurrance and effects of accidental damage should be considered. Damage in health buildings has increased over the years due to the use of heavier mechanical equipment for the movement of patients and supplies and, to some extent, as a result of lightweight, often less robust, building materials. Most damage to doors, and to floor and wall surfaces, is caused by wheeled traffic. Measures to minimise damage should be taken in the form of protective corners, buffers and plates, and to proper continuation of floor coverings, ie strong screeds and fully bonded floor coverings. Protective devices should be capable of being renewed as need arises. Reference should be made to the relevant British Standards, to the advice in the Department's DS (Supply) letter 42/75 dated 5 August 1975 on the buffering of movable equipment, and to the guidance contained in Volume 2 of HBN 40 'Common Activity Spaces'. Further information is provided in Health Technical Memoranda 56, 58, and 61.

Maintenance and cleaning

5.20 Materials and finishes should be selected to minimise maintenance and be compatible with their intended function. Building elements that require frequent redecoration or are difficult to service or clean should be avoided. Special design consideration should be given to elements such as entrances, corners, partitions, counters and any others which may be subjected to heavy use. Floor finishes should be restricted in variety and, where soft floor coverings are specified and spillage is anticipated, should have a backing impervious to fluids and a non-absorbent pile. Wall coverings should be chosen with cleaning in mind. Health Technical Memoranda 56, 58 and 61 give guidance on these aspects for partitions, internal doorsets and flooring.

Information technology in the NHS: Provision for Automatic Data Processing (ADP)

5.21 Information technology has a central role in health management. The use of computers and telecommunications—and the rate of technological innovation—continue to increase. The implications for building project teams are threefold: firstly, a requirement for the housing of the computer(s); secondly, a requirement for the provision of ducts for transmission cabling; and thirdly, sufficient space and adequate power supplies for modems, visual display units, printers and associated software and stationery. Even if the introduction of ADP

is not proposed at the time that the project team completes its brief, it will be advisable to design in such a way that equipment can be introduced easily and quickly at some later date.

5.22 There are two principal matters of concern: visibility and noise. Visual display units (VDUs) are now a familiar sight and it will easily be appreciated that they cannot be reduced beyond a certain size. Consequently, sufficient and convenient space must be provided for them; also, since the brightness of the letters displayed on the screen cannot exceed a certain limit, special attention must be given to the ambient lighting to ensure that the contents of the screen are legible. Space will be required in front of the screen for a keyboard. The problem of noise arises from impact printers, but much has been done to reduce noise and the latest laser printers work reasonably silently.

5.23 Computing expertise is now widely available in the NHS and project teams should ensure that, at an early stage, they inform themselves concerning current and projected local computing policies, and that their proposals confirm with them.

Education and training

Undergraduate medical students

5.24 If it has been agreed that the teaching of undergraduate medical students will take place in the accommodation, and their numbers necessitate additional space, this should be provided as part of the overall requirements for the unit. Reference should be made to the Department's letter DS 65/74 about teaching hospital space requirements, issued on 22 March 1974, and letter DS 86/74 dated 27 March 1974. (In Wales, reference should be made to letter HDS 3/75/1 dated 29 April 1974).

Postgraduate medical education

5.25 Although education requiring certain special facilities will take place in the district's education centre, some teaching has to take place in the OPD. Apart from the use of seminar rooms, no special facilities are normally required elsewhere in the hospital.

Nurse education

5.26 All districts undertake nurse and midwife education, and most have the approval of the statutory body to conduct qualifying courses. As qualifying and formal post-basic courses are largely clinically based, officers of the statutory body inspect or monitor clinical areas (as well as teaching accommodation) for adequacy, and volume and range of work.

5.27 Student nurses are likely to attend the OPD, but no special facilities are required.

Other staff

5.28 The requirements of students in professions other than medical and nursing will need to be taken into account, and the appropriate people and/or bodies should be consulted at the initial planning stages.

Portering

5.29 Movement of patients or goods within, to or from the OPD may be beyond the capacity of the occupants. This will generate requirements for portering assistance.

Courtyards

5.30 There are several reasons why courtyards may usefully be provided in hospital buildings. They enable more rooms to receive natural daylight and ventilation. Secondly, they provide an outlook which can compensate for the lack of a longer view. Suitable layout and planting can help to preserve privacy in surrounding rooms. Ground-cover planting is often more successful than grass and is easier to maintain.

5.31 It is desirable to provide access to courtyards from day rooms or corridors wherever possible and thresholds should be designed to facilitate movement of disabled people. Seating should be provided. Access for maintenance and cleaning should be from a hospital street or other corridor so that patients and staff are not disturbed. Adequate water points, power-points and lighting, if necessary, should be provided in all courtyards.

5.32 Reference should be made to HBN 45 'External works for health buildings' (in preparation).

Component Data

5.33 The Component Data Base consists of a series of Health Technical Memoranda which provide specification and design guidance on building components for health building which are not adequately covered by current British Standards. No firms or products are listed. These HTMs are listed in the Bibliography at the end of this Note (HTM 54–69).

5.34 The technical information in this series is the result of research and devolopment funded by the Department as part of collaborative working arrangements over a number of years between the Department, the NHS, and industry through the medium of the Component Data Base, managed by a Steering Group staffed mainly by NHS professionals.

Internal environmental conditions

Ventilation

5.35 Natural ventilation is usually caused by the effect of wind pressure. It will also occur to some extent if there is a temperature difference between inside and outside the building. This thermo-convective effect frequently predominates when the wind speed is low and will be enhanced if there is a difference in height between inlet and outlet openings. Ventilation induced by wind pressure can promote high air change rates through a building if air is able to move freely within the space from the windward to the leeward side of the building. Internal partitions, fire compartment walls and closed doorways can however often impede the flow path and when this happens the process will be more dependent on single-sided vent-

ilation. Nevertheless, even with this degree of obstruction to air movement, acceptable ventilation may still be obtained without excessive window openings which could prejudice safety, security and comfort. Some types of windows, eg vertical sliding, can enhance single-sided exchange by temperature difference and these will improve the overall rate of natural ventilation in protected or sheltered areas where the effect of wind pressure is likely to be minimal. Section 2.3 of HTM 55 'Windows', and BS 5925—'A Code of Practice for Design of buildings'—provides further guidance on this subject.

Furnishings and finishes

5.36 Furnishings and finishes should be attractive in appearance but hardwearing; their selection should form an integral part of the design process and be co-ordinated within the overall design scheme. The problems of maintenance, cleaning and flammability should be borne in mind. (Flammability standards are set out in the Health Services Supply Purchasing Guide Vocabulary Section T).

Flooring

5.37 It is important to select a floor covering which contributes towards the creation of an attractive environment, but which does not present a hazard to disabled people or the movement of wheeled equipment. It is important that whatever floor covering is chosen can be effectively cleaned, maintained and, where necessary, repaired. Rapid developments in soft floor covering technology have produced a wide variety of new materials. (See report of the Floor Covering Study Group issued to Health Authorities with HN(78)32—in Wales WHN(78)92—and Health Technical Memorandum 61—'Flooring'). Floors should not present, or appear to present, a slip hazard, and the patterning should not induce disorientation. Changes of floor level should be avoided wherever possible. Surface drag, static electricity, flammability, and infection hazards are other factors which need to be considered. (See also 'Maintenance and cleaning', paragraph 5.20.).

Design features

5.38 The physical limitations of many people impose special demands on internal design and fittings. Reference should be made to the ergonomic drawings in HBN 40—'Common Activity Spaces'—Volume 1, and Volume 4—'Designing for disabled people'. Features requiring consideration are as follows.

Shape of rooms

5.39 The shape and appearance of rooms have effects on people. Rooms which are square or nearly square are preferable for most purposes. Long, narrow, tunnel-like rooms and rooms which are small, internal, badly lit or poorly ventilated, and which may therefore be claustrophobic, should be avoided.

Doors

5.40 Doors should be wide enough to allow a clear space for people using a walking aid and for the passage for wheelchairs. In some parts of the hospital, doors must be wide enough to allow the passage of beds and complementary equipment eg dripstands. Door springs should not be too strong, otherwise access for disabled people is very difficult. This also applies to the passage of beds etc. Lever handles should be 900mm above floor level. When glazed doors are provided, the size and height of the glass panels should be appropriate to requirements for visibility and privacy. If magnetic door closers are required to meet fire regulations, they should be carefully selected to minimise interference with day-to-day activities. In an emergency, it must be possible to enter WCs from the outside, and doors should be fitted with easygrip bolt handles. Bi-fold doors are not suitable. Reference should be made to HTMs 58 and 59 for information on suitable components and for further guidance.

Internal spaces

5.41 Internal rooms may contribute to economy in planning but the resulting continuous need for artificial lighting and mechanical ventilation will add to both capital and running costs. Such rooms do not provide good working conditions and staff may therefore be difficult to retain. Internal spaces should be used only for activities of infrequent or intermittent occurrance or which demand a controlled environment. Rooms that are likely to be occupied for any length of time by staff or patients should have windows.

Disabled people

5.42 It is essential to ensure that suitable access and facilities are provided for disabled people who have problems of mobility or orientation. This includes, besides the wheelchair-bound, those who for any reason have difficulty in walking and those with a sensory disability such as a visual or hearing impairment. Authorities are reminded of the need to comply with the provisions of the Chronically Sick and Disabled Persons Act 1970 as amended by the Chronically Sick and Disabled Persons (Amendment) Act 1976, the Disabled Persons Act 1981, and the Building (Disabled People) Regulations 1987. Attention is also drawn to BS 5810:1979 'Access for the Disabled to Buildings.' (One of the effects of the 1981 Act is to apply this British Standard to premises covered by the 1970 Act, which includes those open to the public. Practical guidance for complying with the Building (Disabled People) Regulations is issued by the Department of the Environment under Approved Document M: 'Access for the Disabled.'

5.43 Project teams are encouraged to refer to HBN 40—'Common Activity Spaces' Volume 4—'Designing for disabled people'. This gives guidance and a list of Ergonomic Data Sheets on access, space and equipment relating to disabled people in health buildings.

5.44 If public telephones are provided in the OPD, the telephone equipment hand set should be fitted with an inductive coupler to assist people using a hearing aid. (See paragraph 6.76.)

5.45 It is recommended that project teams consult local representatives of disabled people with regard to the planning of the OPD.

6 Engineering Services

Introduction

6.1 This chapter describes the engineering services contained within an OPD and their integration with the systems serving a whole site. Its purpose is not to inhibit the design solution but to acquaint the engineering members of the multi-disciplinary design team with the design criteria, material specifications and reference data needed to meet the functional requirements.

6.2 Documents referred to by number eg[10] are listed at the end of the Chapter. They are numbered in order of first appearance, repeated references retaining the same number.

Model specifications

6.3 A series of model specifications for the specialised engineering services in health care buildings have been issued nationally and are sufficiently flexible to reflect local needs. The cost allowance for the engineering services in each functional unit of this accommodation is based on the qualities of material and workmanship described in the relevant parts of the model specifications.

Economy

6.4 Engineering services are a significant proportion of the capital cost and thereafter remain a continuing charge on revenue budgets. The project design engineer should ensure not only the utmost economy in initial provision, consistent with meeting the functional requirements and maintaining clinical standards, but also the optimum benefit from the total financial resources these services are likely to absorb during their lifetime.

6.5 Where alternative design solutions are available, their consequential capital and running costs should be compared using option appraisal techniques[1] so that due consideration is given to the need for, and the costs of, maintenance and the eventual replacement of plant and equipment.

6.6 The economic appraisal of alternative design solutions should include the heat conversion and distribution losses at the point of use. Where buldings are located remote from the development's load centre, these losses can often equal the useful energy consumed.

6.7 In any new project, consideration should be given to energy management and the facilities offered by a Whole Hospital control system to enable some measure of energy accounting to be exercised at departmental level.

6.8 After satisfying the Building Regulations[2] on the standards of thermal insulation provided, consideration should be given to the economics of additional insulation to the ground floor slab and to the roof (Engineering Data Sheet CE7[3] refers) particularly where accommodation is located in a building of low-rise construction. Where there is a solidly constructed ground floor, the inclusion of floor insulation will also contribute to patient and staff comfort. Guidance concerning the economic thickness of thermal insulation relative to the cost of energy, 'K' values, temperature differences, capital costs and hours of use is given in Engineering Data Sheet CE11.[4]

6.9 In view of the increasing costs of generating heat energy, consideration should be given to the economics of appropriate equipment for recovering some of the value of the energy which would otherwise be discharged by mechanical ventilation systems. The programmed turning off, or reduction, of heating and ventilation in those spaces used only for part of the day should also be considered.

Maximum demands

6.10 User demand on engineering services is often difficult to predict, but experience indicates that services designed for simultaneous peak conditions are seldom fully utilised in practice. The estimated maximum demand and storage requirement (where appropriate) for each engineering service in this accommodation will need to be assessed individually to take account of the range, size and shape of the functional units, geographical location, operational policies and intensity of use. As a guide, and for preliminary planning purposes only, the table on the next page shows the estimated maximum demands for a self-contained OPD having 18 consulting/examination rooms and located on a DGH site.

Space requirements for services

6.11 The satisfactory performances of plant in health care buildings is particularly important and the design should allow for ease and safe means of access and space for the necessary frequent inspection and maintenance and for eventual removal and replacement. As far as practicable, however, this access should be protected from unauthorised entry.

Service	*Typical Maximum Demand*	*Remarks*
Heating, Ventilation (LPHW)	85 kW	
Domestic hot water	1.10 litre/sec	Storage 500 litres (2 hour recovery)
Cold water supply	1.30 litre/sec	Storage 2000 litres (24 hour supply)
Ventilation supply	1.70 m^3/sec	
Ventilation extract	1.75 m^3/sec	Clean and 'Dirty'
Electrical	13 kW	Includes essential 7 kW
Piped medical gases	No requirement	(but see relevant Supplement to this HBN for requirements of specialty clinics listed in para 1.7)
Fuel gas	No requirement	
Steam	No requirement	

6.12 Recommended spatial requirements for mechanical, electrical and public health engineering services in health buildings are given in HTM 23.[5] The information in HTM 23 is specifically intended for use during the initial planning stages when precise dimensional details of plant are not available.

6.13 The distribution of mechanical and electrical services to final points of use should, wherever possible, be concealed in walls and above ceilings. Heat emitters should be contained within a 200 mm wide perimeter zone under window sills and critical dimensions should be taken from the boundary of this zone. For costing purposes the 200 mm band, which includes the floor area occupied by minor vertical engineering ducts, is included in the building circulation provision.

Activity Data

6.14 User requirements, environmental conditions and equipment arrangements, as described in the Activity Data sheets (see Chapter 8), should be referred to when positioning service components and outlets. Where the latter are for patient operation, they should be of the simplest pattern designed to inhibit interference.

Safety

6.15 Section 6 of the Health and Safety at Work etc Act 1974,[6] as amended by Schedule 3 of the Consumer Protection Act 1987[7] imposes statutory duties on all persons who design, manufacture, import, supply, install or erect "articles for use at work". One of the requirements of this Section is to ensure, so far as is reasonably practicable, that the article is so designed and constructed that it will be safe and without risks to health at all times when it is being set, used, cleaned or maintained by a person at work. All parts of engineering systems are covered by the term "articles for use at work" and designers of these systems for health care premises must therefore fulfill their statutory obligations.

Fire precautions

6.16 Design guidance relative to the fire precautions in new hospitals is given in HTM 81.[8] Technical information concerning the design and specification of fire detection and alarm systems is detailed in HTM 82[9] which also replaces or modifies certain clauses of BS 5839 Part 1[10] to meet the needs of health care premises. General advice on fire prevention, including the storage of flammable materials, is given in HTM 83.[11]

6.17 The design of the engineering services should accord with the recommendations in the above HTMs and the engineer should verify his proposals in accordance with the procedure described in paragraph 5.16.

Noise

6.18 Excessive noise in the individual areas, whether internally or externally generated and transmitted, can adversely affect the operational efficiency of the department and can cause discomfort. The limits and means of control advocated in Hospital Design Note 4,[12] including its revisions,[13] and the means of control given in Engineering Data Sheet DH(1),[14] should provide an acceptable acoustic environment. In addition to designing for control of noise levels, there may also be a need to ensure speech privacy, ie that confidential conversation is unintelligible in adjoining rooms or spaces. This will typically, but not exclusively, be required in consulting/examination rooms and interview rooms. The acceptable noise level and any requirement for speech privacy, where applicable, in the individual spaces in this department is shown on the Activity Data "A" Sheets.

Control access

6.19 Primary engineering distribution control and isolation devices should be protected against unauthorised operation, for example, switchgear and fuse-boards should be housed in secure cupboards. They should be

located in circulation rather than working areas and, where appropriate, should be easily and safely accessible for staff operation.

Engineering Commissioning

6.20 It is most important that engineering services should be fully commissioned. HTM 17[15] describes the requirements which should be included in the design and construction contract documents. Flow measurement and proportional balancing of air and water requires adequate test facilities, for example, orifice plates, venturi valves etc to be incorporated at the design stage.

MECHANICAL SERVICES

6.21 The mechanical services include the provision of heating, ventilation, hot and cold water supplies. For cost allowance purposes the distribution of the heating, hot and cold water and ventilation systems is deemed to commence at their point of entry into the department and includes pipework, ductwork, fittings, controls and connections to equipment and terminal outlets. The cost allowance also includes for an apropriate proportion of the ventilation plants and associated controls serving this department.

6.22 For environmental requirements in individual spaces, reference should be made to the Activity Data Sheets. Recommended room temperatures, air change rates, hot water service temperature etc are grouped under "Technical Design Data" on each 'A' sheet. The 'B' sheets give the disposition of engineering outlets for the activities described.

Heating

6.23 General space heating requirements can usually be met by low pressure hot water radiators operating as a sub-system from the primary heating distribution system. The children's play area and the nappy change room, as detailed on the Activity Data Sheets, will require the use of low surface temperature heating, utilising convectors or enclosed radiators designed to ensure that their surface temperature does not exceed 43°C.

6.24 Radiators should normally be located under windows or against exposed walls, with sufficient clear space between the top of the radiator and the window sill to prevent curtains reducing the output and adequate space below to allow cleaning machinery to be used. Where a radiator is located on an external wall, back insulation should be provided to reduce the rate of heat transmission through the building fabric.

Temperature controls

6.25 To facilitate overall temperature control, the heating system flow temperature should normally be varied via an external compensator, and thermostatic radiator valves should be installed on all heating appliances. These valves should be of robust construction and selected to match the temperature and pressure characteristics of the heating system. The thermostatic head, incorporating a tamper-proof facility for presetting maximum and minimum room temperature, should be controlled via a sensor located integrally or remotely as appropriate. Where space is restricted, or heat gains and/or losses are particularly variable, consideration should be given to the provision of thermostatically controlled fan-convectors fitted with low-limit control, but only where the generated noise is unlikely to be a nuisance.

6.26 The heating system within the OPD should be equipped with time switch control and programmed to accommodate the working hours of the unit. The control system, preferably incorporating an optimum start device, should be used to set-back the space temperature to an anti-condensation level of approximately 10°C when the accommodation is closed (actual set-back to be determined from local trials). To allow for occasional abnormal hours of working, a conveniently sited manual override time restricted switch should be provided so that the heating system can be restored promptly to its full operational state.

Ventilation

6.27 Recommendations for the ventilation of individual spaces in this department are shown on the Activity Data 'A' sheets.

6.28 Mechanical ventilation systems are expensive in terms of capital and running costs and planning solutions should be sought which take maximum advantage of natural ventilation. It is acknowledged that planning constraints imposed by the building shape and/or functional relationships of specific spaces will invariably result in some measure of enclosed internal areas. Ventilation costs can however by minimised by ensuring that wherever practicable core areas are reserved for rooms that require mechanical ventilation irrespective of whether their location is internal or peripheral. Examples are: sanitary facilities, dirty utility, treatment rooms and rooms whose clinical or functional requirements have specific environmental needs and where, for reasons of privacy and absence of solar gain etc, windowless accommodation is acceptable. Other spaces appropriate to core areas are those which have only transient occupation and therefore require little or no mechanical ventilation. Examples are circulation and some storage areas.

6.29 Mechanical ventilation should be provided in the treatment facility, the chiropody room, the plaster room, and all internal waiting areas in this department. In addition, in the treatment facility, a purpose-installed exhaust pipe (typically 25 mm diameter with a suitable push-in connector and permanent identifying label) should be provided for use with cryo-surgery equipment. (See paragraph 4.30.)

6.30 Air movement induced by mechanical ventilation should be from clean to dirty areas, where these can be defined, and should generally be arranged to encourage uniform air movement within the space. The design should allow for an adequate flow of air into any space having

only mechanical extract. Transfer grilles should be provided in doors or walls to connect such spaces to either naturally ventilated corridors or other spaces with mechanical air supply. Such arrangements, however, should avoid the introduction of untempered air and should not prejudice the requirements of fire safety or speech privacy.

6.31 The attention of the interior designers should be brought to the need to consider the ventilation when planning and specifying curtain tracks. If the location of the curtains may affect the ventilation, they should be provided with a net heading.

6.32 The fresh air supply should be tempered and filtered before being distributed via high level grilles with output profiles designed to avoid discomfort to lightly clad patients. Ventilation supply plant should include air filters having a minimum arrestance of 85%, and a minimum average dust spot efficiency of 25%, when tested in accordance with BS 6540 Part 1.[16] Filters must be readily accessible for replacement and maintenance purposes and provided with a pressure-differential indicator; coarse prefilters may be necessary where the intake air is exceptionally polluted. Heater batteries should be sized for the ventilation requirements only, ie not the building fabric loss. All heater battery coils should be provided with frost protection.

6.33 A separate extract system will be required for 'dirty' areas, for example, utility and sanitary facilities, and a dual motor/fan unit with an automatic changeover facility should be provided to ensure that these rooms are always maintained at a negative pressure when the unit is in use.

6.34 External discharge arrangements for extract systems should be protected against back pressure from adverse wind effects and located to avoid re-introduction of exhausted air into the building through air intakes and windows.

Ventilation controls

6.35 Supply and extract ventilation systems should include indicator lamps to confirm the operational status of each system. In this department, the use of the system is likely to be on a regular daily pattern, therefore time-switch control with manual override for a limited period should be provided. Where a system is provided for a particular space, the indicator should be in, or immediately adjacent to, that space and local controls should be provided as appropriate. In the case of a more general system of ventilation, for example WCs, the indicator should preferably be located at the staff base. Where manual controls are available for staff use, they should be provided with labels clearly defining their function.

Hot, cold and drinking water services

6.36 The domestic hot water supply should be taken from the general hospital calorifier installation at an outflow temperature of 60°C ± 2.5°C, and distributed to all outlets so that the return temperature at the calorifier is not less than 50°C.

6.37 Where hot water temperatures of 60°C are required and, due to extensive pipe runs, this cannot be achieved, local booster water heaters, electrically heated, should be considered.

6.38 Guidance concerning cold water supply pipework and distribution systems is given in HTM 27.[17] For frost protection purposes, and to prevent condensation staining decorative finishes, all cold water pipework, valves and flanges should be insulated and vapour sealed.

6.39 To control Legionallae, the water service should be designed, installed and commissioned in accordance with the recommendations in the DHSS Code of Practice.[18]

ELECTRICAL SERVICES

6.40 The electrical installation will include main intake switchgear, the wiring and equipment for lighting, power, and environmental plant together with the earth bonding of extraneous metalwork. Extensions from the hospital central systems for telephones, clocks, fire alarms and staff location services, together with staff call systems, will also be required. These installations should comply in all respects with the current IEE Regulations for Electrical Installations[19] and conform to the requirements of HTM 7.[20]

6.41 Reference should be made to the Activity Data sheets for the recommended levels of internal illumination and the disposition of outlets for power, telephones, call systems, and clocks, etc in individual spaces.

6.42 The point of entry for the electrical supply will be a departmental switchroom housing the main isolators and the main distribution equipment. The switchroom will also be the distribution centre for subsidiary electrical services and, wherever possible, all equipment should be mounted at a height to give easy access from a standing position. The switchroom should be positioned so as to minimise the cost of cabling required to serve the accommodation.

Electrical installation

6.43 The electrical installation in occupied areas should be concealed, usually using PVC insulated cable in screwed steel conduit or trunking, but, in certain circumstances, mineral insulated copper covered cables may be necessary. External installation should comprise PVC insulated cables in galvanised screwed steel conduit with fittings of weatherproof pattern. Steel conduit and trunking wireways for communication and data systems should also be concealed whenever possible.

Electrical interference

6.44 Guidance concerning the avoidance and abatement of electrical interference is given in HTM 14[21] and fluorescent luminaires (lighting fittings) should comply with BS 5394.[22]

6.45 Care should be taken to avoid mains-borne interference and electrical radio frequency interference

affecting computers and other electronic equipment used here or elsewhere on the hospital site.

Lighting

6.46 Practical methods of lighting the various functional spaces are contained in the CIBSE Lighting Guide.[23] The choice of luminaire should take account not only of the requirements for light distribution and visual comfort appropriate to the space, but also the operational efficiency of the light source used. Luminaires should be of a type which are easily cleaned and maintained, as well as being manufactured and tested in accordance with the requirements specified in the relevant sections of BS 4533.[24] Their location should be readily accessible for lamp changing and maintenance, with the overriding requirement that the recommended standard of illuminance is provided to the task areas. Luminaires using fluorescent lamps should be installed when artificial lighting is required for long periods or where areas are devoid of natural light; intermittently-used luminaires may be fitted with incandescent or compact fluorescent lamps.

6.47 In reception and circulation areas, colour graphics and lighting should be co-ordinated to create a calm and welcoming atmosphere whilst also contributing to the safe movement of patients throughout the department.

6.48 It is essential that fluorescent lighting in clinical areas is derived from one of the recommended types of lamps having suitable colour rendering characteristics.[25][26] In such areas the colours chosen for walls, floors and ceilings should be carefully selected; architects and engineers should collaborate to ensure that the decorative finishes are compatible with the colour rendering properties of the lamp and the spectral distribution of the light source is not unduly altered. HN(85)20[27] (in Wales, CAWO (85)3) describes some high efficiency fluorescent lamps with good colour rendering properties which are also suitable for general use within this department.

6.49 Control of lighting is normally by local switches and these should be provided in sufficient numbers to allow variation in lighting options, for example, reduced levels of illuminance when circumstances permit, and to encourage energy conservation. This is particularly relevant in spaces where, because daylight is restricted, supplementary artificial lighting is required for long periods in areas away from windows. However, it is important that excessive contrast with adjacent areas should be avoided.

6.50 In areas where computer terminals are to be used, the lighting should be designed to avoid bright reflections on the screen and to ensure that the contents of the screen are legible. Further guidance can be found in CIBSE Technical Memorandum TM6.[28]

Lighting of corridors, circulation and waiting areas

6.51 The lighting of these areas can make a major contribution to the creation of a non-institutional environment in this department. The use of indirect fluorescent light sources, for example, wall-washing techniques using fluorescent lamps concealed by a pelmet or cornice to enhance interior finishes and decor, combined with the careful selection of ceiling finishes and decor, and the judicious location of ceiling luminaires and illuminated signs to indicate a corridor junction or a particular facility, can produce a more domestic type ambience. The lighting of corridors and circulation spaces not specifically covered by Activity Data sheets should be in accordance with the guidance contained in HBN 40 Volume 2.[29]

Examination lighting in treatment rooms and consulting/examination rooms

6.52 A mobile examination lamp should be provided in each consulting/examination room, and in the treatment rooms, as shown on the Activity Data "A" Sheets. These lamps should operate at extra low voltage, be totally enclosed, and must be equipped with a heat filter. The temperature of external surfaces must be such as to avoid injury to patients and staff. These luminaires should comply with the requirements of BS 4533: Section 102.55[30] and be in accordance with the performance specification of Type A included in BS 4533: Section 103.2.[31]

Controlled Drugs cupboard

6.53 In compliance with HC(77)16[32] (WHN(77)32 in Wales), a red indicating lamp should be provided on each Controlled Drugs cupboard. Remote indicating lamps should be provided, where appropriate, outside the doorway to the clean utility room in which the cupboard is located, in the Sister's office, at the enquiry counter, and, after working hours, in a continuously manned area external to the OPD. The lamps should be interlocked with the cupboard to give visual indication when the cupboard is unlocked and should be supplied from an essential circuit. For further information see HTM 63 'Fitted Storage Systems'[33] and its associated specification for electrical services. The cupboard should be in accordance with BS 2881.[34]

Socket-outlets

6.54 Sufficient 13 amp switched, shuttered socket-outlets, connected to ring or radial circuits should be provided to allow all portable appliances likely to be used simultaneously to be individually supplied. Activity Data sheets indicate specific locations for the outlets associated with individual activities; the installation of twin outlets should be considered where these activities occur in juxtaposition.

6.55 In treatment areas, and in consulting/examination rooms, socket outlets should be arranged so that a supply is available in these spaces from at least two separately fused circuits of common phase.

6.56 Depending on local circumstances, consideration may need to be given to the quality of the electrical supply at socket outlets serving computer equipment. It is envisaged that the circuits will be arranged (see paragraph 6.64) so that regulators, filters or other specialised computer power supply equipment can be readily incorporated either initially or at a later date. The cost allowances do not include for the supply and installation of any such auxilliary equipment.

6.57 Domestic cleaning appliances with flexible leads nine metres long should be assumed and socket outlets, usually in corridors, should be provided to enable such machines to operate over the whole area of the accommodation.

6.58 Fixed appliances rated up to 13 amp should be permanently connected to double pole switched spur boxes and fused as required. Appliances rated in excess of this load, or those requiring a three-phase supply, should be permanently connected to separate final circuits from fuse-boards and independently switched.

6.59 Local switches or other means of isolation should be provided adjacent to electrical machinery and plant to ensure the safety of operators and maintenance staff.

6.60 Heating appliances, and automatically operated equipment, should be provided with indicator lights to show when the equipment is energised. Such indicators should be incorporated in the control panel of the apparatus, in the control switch or in the socket-outlet from which the apparatus derives its supply.

6.61 The electrical supply connections to electro-medical equipment should comply with BS 5724.[35]

X-ray equipment

6.62 The use of mains-operated mobile X-ray equipment will not normally be required in this accommodation.

Emergency electrical supplies

6.63 Guidance concerning the provision of emergency electrical supplies is given in HTM 11,[36] and the grade of standby lighting provision is shown on the Activity Data 'A' sheets. Safety lighting in accordance with HTM 11[36] and BS 5266[37] should be provided on primary escape routes.

6.64 Socket-outlets should be so distributed that, in each area where essential equipment may be used, socket outlets connected to at least two separate circuits of common phase are available with one circuit connected to the essential electricity supply system.

6.65 All socket-outlets in patient treatment areas, and for computer equipment, together with all communication, clock and alarm systems throughout the department should be connected to the essential electricity supply system.

Patient/staff call system

6.66 Patient/staff call points should be provided in all patient WCs. Each call unit should comprise a push button, reassurance lamp and reset switch.

Staff/staff call system

6.67 Staff/staff call points should be provided in all patient WCs and treatment rooms. Each call unit should comprise a pull switch, reassurance lamp and reset switch.

Call systems (general)

6.68 A visual and audible indication of operation should be provided at a suitable staff base to give responding staff unambiguous identification of the call type and source. The audible signal initiated by patients should operate for one second at ten second intervals until cancelled. The audible alarm signal initiated by staff should operate intermittently at half second intervals. Hospital policy may also require a staff/staff emergency alarm to be transferred to a centrally manned point either immediately or if it has not been cancelled after a predetermined period.

6.69 Local visual indication of room source to supplement that provided at the selected staff base may be required in circulation spaces. If this facility is provided, staff/staff alarm calls should be readily distinguishable from patient/staff calls.

6.70 All call systems should operate at extra-low voltage. Further general guidance is given in HTM 15.[38]

Next patient call systems

6.71 Some clinicians may prefer their patients to be called personally, but in order to assist patients who are deaf or have some auditory impediment a simple and unobtrusive 'next-patient' call system will be required. This should comprise an illuminated indicator panel and warning buzzer of subdued tone located at the reception desk.

Staff location system

6.72 The staff location system employed in the hospital should be extended to give adequate cover to the OPD. Guidance on these systems is given in HTM 20.[39]

Telephones

6.73 Central telephone facilities for internal and external calls will normally be available and should be extended to serve the OPD in accordance with the requirements shown on the Activity Data sheets. Telephones will normally be of the desk pattern.

6.74 Guidance concerning the provision of telephone systems and equipment, including the telephone internal cabling distribution and telephone hand sets, is given in HBN 48.[40]

6.75 It is considered that there is no justification for providing any separate internal communication systems in this accommodation in addition to the automatic telephone facilities.

6.76 Approved telephone outlets for use with a payphone may be provided in waiting areas where patients can use a telephone with reasonable privacy, if this facility is not conveniently located elsewhere (for example, in the main entrance to the hospital). If provided, all such payphones should be connected directly to the public network by separate exchange circuits and not routed via the hospital switchboard. They should also have their mode of operation restricted to making outgoing calls only. To assist patients with impaired hearing, the handset earpiece

should be fitted with an inductive coupler suitable for use with hearing aids. In addition, consideration should be given to mounting at least one payphone at a height convenient for a wheelchair user.

Wireways for Data links

6.77 Wireways, which should be segregated from electrical power and telephone cabling distribution systems, will usually be required for computer links between the main hospital computer system and the enquiry and various clinic reception desks. There may also be a requirement for data links to other staff work stations, depending on the local policy for automatic data processing.

Electric clocks

6.78 Clocks should operate in conjunction with a master clock system. If such a system is not available, synchronous clocks should be installed using a common clock circuit suitable for future connection to a master system. Clocks should be installed only where they can be viewed by numbers of staff/patients/visitors.

Lightning protection

6.79 Protection against lightning should be provided in accordance with HTM 7,[20] Engineering Data Sheet DB 2,[41] and BS 6651.[42]

INTERNAL DRAINAGE

6.80 The primary objective is to provide an internal drainage system that uses the minimum of pipework and remains water-tight and air-tight at joints and connections, but which is sufficiently ventilated to retain the integrity of water seals.

Design parameters

6.81 General design guidance in given in the relevant British Standards and Codes of Practice including BS 5572,[43] and the current Building Regulations.[2] Recommendations regarding spatial and access requirements for public health engineering services are given in Engineering Data Sheet EA5.[44]

6.82 The gradient of branch drains should be uniform and adequate to convey the maximum discharge to the stack without blockage. Practical considerations such as available angles of bends/junctions and their assembly, as well as space considerations, usually limit the minimum gradient to about 1:50 (20 mm/m). For the larger pipes, eg 100 mm diameter, flatter gradients can be used but require workmanship of a high standard if adequate self-cleansing flow is to be maintained. It is not envisaged that pipes larger than 100 mm diameter will be required within the drainage system serving this department.

Operational considerations

6.83 Unusual and difficult maintenance problems can arise because of user interference and abuse. For example, the disposal of paper towels into WCs after hand-washing or after their misuse for some other purpose, is a frequent cause of blockages particularly in long branches laid to flat gradients. Adequate provision of disposal receptacles or where appropriate the installation of warm-air dryers can help to mitigate this problem.

Materials specification

6.84 The materials specified for the drainage system in this accommodation will depend upon their location and the nature of effluent being discharged. Waste pipework should, as far as practicable, be concealed; where exposed, it should be metallic and very securely fixed. Although adequate for the drainage requirements, UPVC may not always be acceptable to the fire officer and it should not be installed above 'sentitive' areas, for example, switchrooms, operating, intensive therapy, radio-diagnostic or catering departments.

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7 Cost Information

Introduction

7.1 For all types of health buildings, it is clearly of vital importance that building costs and revenue expenditure be kept as low as possible consistent with acceptable standards. Within this general context, HBNs provide guidance on accommodation for health buildings which the Department of Health, in conjunction with the National Health Service, recommends for the provision of a given service.

7.2 This Note gives guidance on the provision of general out-patient functions only, including venepuncture and chiropody. Specialty clinics which are unable to use the general accommodation are excluded. The accommodation comprises combined consulting/examination rooms, clinic reception and clinic waiting spaces, treatment and utility rooms, staff facilities, sanitary and storage facilities.

Functional units

7.3 The Functional Units in this Note are:

a. Departments containing:
   (i) 6 consulting/examination rooms (C/E Rooms);
   (ii) 12 C/E Rooms;
   (iii) 18 C/E Rooms:

b. Plaster facilities.

Schedules of areas for each size of department are provided at the end of this Chapter.

Plaster facilities

7.4 The accommodation includes a plaster room, together with appropriate storage space and an office, for orthopaedic clinics held within the OPD. A single size unit has been allowed for, which should be large enough to cater for most circumstances.

Works cost

7.5 To prepare an estimate of the Works Cost for a scheme, reference should be made to the Capricode Health Building Procedures manual (Chapter 1, Stage 1, Annexe 1c). The total departmental cost for a scheme is derived by aggregating the cost of the functional units as appropriate to the particular scheme.

7.6 The cost allowance covers the building and engineering guidance set out in this Note. The costing of the functional units assumes that they will be incorporated into a whole hospital to form a complete department.

Circulation

7.7 Space for circulation, which includes allowances for planning provision, engineering zone and partitions, has been added to each functional unit and is included in the cost allowances.

Communications

7.8 Staircases, lifts and plant rooms, with the exception of electrical switchrooms, are not included in the cost allowances. Corridors within the department, but not any linking it with other departments, are included in the allowances.

Dimensions

7.9 In determining spatial requirements, the essential factor is not the total area provided but the critical dimensions, ie. those dimensions critical to the efficient functioning of the activities which are to be carried out. There are therefore no recommended areas associated with the schedules of activity spaces. To assist project teams in preparing detailed design solutions for the rooms and spaces, the Department of Health has carried out studies to establish dimensional requirements in the form of critical dimensions. The results of these studies appear as ergonomic diagrams in Health Building Note 40—'Common Activity Spaces'.

7.10 For development planning and at the earliest stage of a design, it may be convenient for designers to have data available which enables them to make an approximate assessment of the sizes involved. For this reason, the schedules of areas, prepared for the purpose of establishing the cost allowances, are included at the end of this Chapter.

7.11 It is emphasised that the areas published DO NOT represent recommended room sizes, maximum or minimum allowances, nor are they to be regarded in any way as specific individual entitlements.

Engineering spaces

7.12 The cost allowances allow for the provision of space for a heating and ventilating zone adjacent to the external walls and for small vertical ducts. This space is included, together with the planning provision, as part of the circulation shown in the schedules of areas for costing.

Engineering services

7.13 The following engineering services, as described in Chapter 6, and exemplified in the Activity Data (Chapter 8), are included in the cost allowances. Primary engineering services (except mechanical ventilation) are assumed to be conveniently available at the boundary of the OPD:

a. Mechanical services

Heating: Low pressure hot water system, maximum surface temperature generally 82°C, but 43°C in children's play area and nappy change room.

Ventilation: Mechanical supply and extract to meet clinical and functional requirements; other areas will be mainly naturally ventilated.

Cold water service: Centrally supplied to service points including drinking water and fire hose reels. Storage tanks excluded.

Hot water service: Centrally supplied to service points. Storage excluded.

b. Electrical services

Departmental distribution switchboard.

General lighting as required by tasks.

Fluorescent, tungsten, safety and emergency luminaires, as appropriate.

Socket outlets and other power outlets for fixed and portable equipment.

Supplementary equipotential earth bonding connections.

Standby and safety installations from the main hospital supplies.

Patient/Staff and Staff/Staff call systems;

Fire, security and drug cupboard alarm systems.

Impulse clocks.

"Next Patient" call system.

Staff location extension to the hospital system.

Telephone internal cabling distribution and outlets. Hand sets excluded.

Data transmission conduits only.

Schedules of Accommodation

"A" Sheet No.	*Activity Space*	*Space Area Sq. m.*	*6 C/E Rooms*		*12 C/E Rooms*		*18 C/E Rooms*	
			Qty.	*TOTAL AREA Sq. m.*	*Qty.*	*TOTAL AREA Sq. m.*	*Qty.*	*TOTAL AREA Sq. m.*
	PATIENTS FACILITIES							
J0211	Enquiry Desk	7.50			1.0	7.50	1.0	7.50
J1116	Clinic Waiting (25 Places)	34.00	1.0	34.00	3.0	102.00	4.0	136.00
J1217	Waiting (10 Places)	16.00			2.0	32.00	4.0	64.00
M0704	Relatives'/Interview Room	9.00	1.0	9.00	1.0	9.00	1.0	9.00
V1106	WC	2.00	1.0	2.00	3.0	6.00	3.0	6.00
V0906	Specimen/Wheelchair WC	4.50	1.0	4.50	1.0	4.50	2.0	9.00
V1113	Nappy Change Room	4.50			1.0	4.50	1.0	4.50
J1409	Childrens' Play Area	7.00	1.0	7.00				
J1401	}	15.00			1.0	15.00	1.0	15.00
	CLINIC/TREATMENT AREAS							
J0806	Reception	6.00	1.0	6.00	2.0	12.00	4.0	24.00
C0216	C/E Rooms (Combined)	15.50	6.0	93.00	12.0	186.00	18.0	279.00
X0108	Treatment Rooms	13.00			2.0	26.00	2.0	26.00
X0109	Treatment Preparation	6.00			1.0	6.00	1.0	6.00
X0112	Treatment Room & Preparation	16.00	1.0	16.00				
C1404	Venepuncture Cubicles	6.00	1.0	6.00	2.0	12.00	3.0	18.00
X0210	Chiropody (with Changing)	15.00			1.0	15.00	1.0	15.00
C1401	Physical Measurement	3.50			1.0	3.50	2.0	7.00
	UTILITIES							
T0505	Clean Utility	11.50	1.0	11.50	1.0	11.50	1.0	11.50
Y0412	Dirty Utility	12.00	1.0	12.00	1.0	12.00	1.0	12.00
Y1503	Cleaner's Room		1.0	6.50	1.0	6.50	1.0	8.00
K0101	Switch Room	2.00	1.0	2.00	1.0	2.00	1.0	2.00
Y0610	Disposal Hold	3.00	1.0	3.00	1.0	3.00	1.0	3.00
	STAFF FACILITIES							
M0201	OPD Manager's Office	10.00	1.0	10.00	1.0	10.00	1.0	10.00
M0201	Sister's Office	10.00	1.0	10.00	1.0	10.00	1.0	10.00
M0531	Appliance Clerk's Office	8.00	1.0	8.00	1.0	8.00	1.0	8.00
M0112	Visiting Staff Office	9.00			1.0	9.00	1.0	9.00
D0201	Staff Room		1.0	10.00	1.0	15.00	1.0	18.00
V1011	Staff WC	2.00	1.0	2.00	1.0	2.00	1.0	2.00
	STORAGE							
W1530	General Store		1.0	6.50	1.0	12.50	1.0	15.00
W1531	Equipment Store		1.0	5.50	1.0	8.00	1.0	10.50
W1532	Clinic Store		1.0	3.50	1.0	5.50	1.0	7.50
W1515	Appliance Clerk's Store	1.00	1.0	1.00	1.0	1.00	1.0	1.00
W1533	Chiropodist's Store	1.00			1.0	1.00	1.0	1.00
W1507	Stationery Store	1.50	1.0	1.50	1.0	1.50	1.0	1.50
NET TOTAL				270.50		559.50		756.00
CIRCULATION ETC				121.00		251.00		339.00
TOTALS				391.50		810.50		1,095.00
DEPARTMENTAL AREAS				390Sq.m		810Sq.m		1,095Sq.m

Plaster Facilities

"A" Sheet No.	*Activity Space*	*Space Area Sq. m.*	*Qty.*	*TOTAL AREA Sq. m.*
X0206	Plaster Room (2 Couches)	24.00	1.0	24.00
M0711	Office	8.00	1.0	8.00
W1513	Plaster Store	2.50	1.0	2.50
W1514	Equipment Store	2.50	2.0	5.00
W1534	Crutches Store	2.00	1.0	2.00
NET TOTAL				41.50
CIRCULATION ETC				10.00
GROSS TOTAL				51.50
DEPARTMENTAL AREA	=			50

8 Activity Data

Introduction

8.1 'Activity Data' is an information system developed to help project and design teams by defining the users' needs more precisely. This information constitutes the computerised Activity Data Base, issued to Regional Health Authorities in England and to the Health Departments in Scotland, Northern Ireland and Wales in 1989. It comprises three types of information sheet: Activity Space Data Sheets ('A' sheets), their supporting Activity Unit Data Sheets ('B' sheets), and 'A' Sheet Component listings, ('D' Sheets).

8.2 'A' sheets record in more detail than is described in this Note each task or activity that is performed in a particular activity space (which may be a room, space or bay) together with details of the environmental conditions and the technical data necessary to enable the activities to be performed. Each 'A' sheet also contains a list of the titles and code numbers of the relevant 'B' sheets.

8.3 'B' sheets provide narrative text and graphics to scale relating to one activity. They show equipment fitted or supplied as part of the building, and the necessary engineering terminals. There are also "Component B sheets" which show a range of particular components rather than an activity.

8.4 'D' Sheets provide information about the total quantities of components (excluding those in Group 4—see paragraph 1.14) extracted from all the 'B' Sheets selected for inclusion in an individual 'A' Sheet.

8.5 Further information about the use and preparation of Activity Data can be found in the "Guide to 'A' and 'B' Activity Data Sheets and their use in Health Building Schemes" which was issued to Regional Health Authorities with EL(89) MB/19 (in Wales, WHC(89)18). Copies of the Guide are available from the Department's Estates Directorate, Branch ED6, Room 540, Euston Tower, 286 Euston Road, London, NW1 3DN.

Activity Data applicable to this Note

8.6 The 'A' sheets recommended for the activity spaces in this Note are either new sheets, amended ones, or selected from existing sheets. A list of 'A' Sheet code numbers and titles is given in the following page(s).

8.7 Further Activity Data Sheets may be selected, or drawn up by project teams to their own requirements, for any services not described in the Note or included in the list. Members of project teams are advised to contact their Regional Activity Data Co-ordinator/Welsh Office for information and advice about the selection of Activity Data at an early planning stage. In order to ensure consistent and economic provision, variations from the 'A' sheets recommended for the spaces covered in this Note should be considered only where it has been decided that the function of a space will differ substantially from that described.

List of Activity Data "A" Sheets

ACTIVITY SPACE	*"A" SHEET CODE NO.*	*PARA NO. IN HBN*
1. RECEPTION: PATIENTS/ VISITORS: ENQUIRY DESK 2 Entrance to department	J0211	4.4
2. WAITING: PLAY AREA Up to 3 children	J1409	4.6
3. WAITING: PLAY AREA Up to 6 children	J1404	4.6
4. RECEPTION CLINIC: RECEPTION DESK 2 Patients/Visitors	J0806	4.11
5. CLINIC WAITING: CHAIRS UP TO 25	J1116	4.13
6. CLINIC WAITING: OUT-PATIENTS PLACES 10	J1217	4.27, 4.40
7. CLINICAL: WEIGHING/ MEASURING	C1401	4.18
8. CLINICAL: VENEPUNCTURE: CUBICLE 1	C1404	4.41
9. CONSULTING ROOM: EXAMINATION: GENERAL	C0216	4.19
10. CONSULTING ROOM: GENERAL	C0103	4.25
11. EXAMINATION ROOM: GENERAL	C0502	4.25
12. TREATMENT FACILITY: PREPARATION SPACE 1	X0109	4.29
13. TREATMENT FACILITY: TREATMENT ROOM: SPACE 1 with preparation area	X0112	4.29

List of Activity Data "A" Sheets (contd)

ACTIVITY SPACE	*"A" SHEET CODE NO.*	*PARA NO. IN HBN*
14. TREATMENT FACILITY: TREATMENT ROOM: SPACES 2	X0108	4.28
15. TREATMENT: SPECIAL EQUIPMENT: CHIROPODY ROOM	X0210	4.35
16. TREATMENT ROOM: PLASTER FACILITIES	X0206	4.42b
17. CLEAN UTILITY: STERILE SUPPLIES —With Controlled Drugs	T0505	4.32
18. DIRTY UTILITY: URINE TESTING	Y0412	4.33
19. STORE: GENERAL SUPPLIES	W1530	4.51
20. STORE: GENERAL EQUIPMENT	W1531	4.52
21. STORE: CLINIC SUNDRIES	W1532	4.53
22. STORE: CHIROPODY	W1533	4.38
23. STORE: APPLIANCE CLERK	W1515	4.55
24. STORE: PLASTER	W1513	4.42c
25. STORE: EQUIPMENT Plaster faciliites	W1514	4.42c
26. STORE: WALKING AIDS	W1534	4.42d
27. STORE: STATIONERY	W1507	4.54
28. OFFICE: DESK 1 All disciplines	M0201	4.44, 4.45
29. OFFICE: APPLIANCE CLERK: DESK 1	M0531	4.46
30. OFFICE/INTERVIEW: STAFF 1	M0711	4.42e
31. OFFICE: DESK 1 All disciplines	M0112	4.48
32. INTERVIEW ROOM: PATIENTS, RELATIVES	M0704	4.47
33. STAFF ROOM: BEVERAGE PREP. PERSONS 8–10	D0201	4.49
34. WASHROOM/WC: WITH CALLS, PLACE 1	V1106	4.56
35. WC/WASH: DISABLED PATIENT, WITH CALLS (with pass-through hatch)	V0906	4.57
36. WASHROOM/WC: SHAVER SOCKET: PLACE 1	V1011	4.56
37. WASHROOM: NAPPY CHANGING	V1113	4.58, 4.6
38. CLEANERS ROOM: SMALL	Y1503	4.59
39. DISPOSAL HOLD: SMALL ROOM	Y0610	4.60
40. SWITCHGEAR: ROOM/ CUPBOARD	K0101	4.61

List of Activity Data "A" Sheets (contd)

APPENDIX

Assessment of Number of Consulting/Examination (C/E) Rooms Required in an OPD

Introduction

1. HBN 12 paragraph 2.8 identifies some of the factors which must be taken into account when assessing the size of an OPD. There is no simple formula, but a method which may be helpful is set out below. The patient and staff data used are for illustrative purposes only; local figures should be substituted.

Definition of terms

2. The terms used in this Appendix and its Annexes are defined as follows:

a. **Clinic session**—a notional period of a half day (usually morning or afternoon) when a clinic is held, comprising a preparation period, consultation period, and clear-up period;

b. **Consultation period**—the total timetabled period that one doctor (or other professional) spends in consultation during a clinic session;

c. **Room session**—the use of a consulting/examination room (C/E room) by a doctor for a period of a clinic session; the total number of room sessions per week is the product of the number of rooms used and the number of clinic sessions held in each of them;

d. **Clinic size**—the number of doctors and/or other professionals requiring consulting/examination rooms for a clinic session. More than one room may be needed by each for effective use of the consultation period.

Current service profile

3. A profile of the current out-patients service should be prepared. An example, showing two specialties only, is included as Annex 1.

Future service profile and derivation of space needs

4. A profile of the planned out-patients service should be prepared and should include the following key factors for each speciality:

a. the projected population on which the required calculations are based;

b. total planned attendances, taking accounts of trends;

c. average number of attendances per patient per annum, following examination of return attendance ratios and frequencies;

d. average consultation times for new and return appointments;

e. consultation period;

f. clinic size.

An example, for two specialties only, is included in Annex 2.

5. When preparing the 'planned service' profile, consider:

a. the current service profile;

b. the need to consult appropriate clinical and managerial staff in connection with the information called for in paragraphs 2 and 4 above, recognising that this will vary between specialties;

c. unmet demand. Levels can be assessed by comparing actual waiting times for non-urgent out-patient appointments with local, regional and national target waiting times and, as necessary, make adjustments to the service provision being planned;

d. proposals for future new clinics.

6. Calculate the number of consultation periods required by each speciality (see Annex 2 for method).

7. Calculate the number of room sessions required for each specialty. Staff who are familiar with each speciality clinic should be involved in assessing the number of combined C/E rooms required for each clinic session, as this will be affected by:

a. the clinic size;

b. the method of working (see paragraph 2(d) above);

c. the time required for patient undressing/dressing.

Annex 3 shows how the information may be documented.

8. The overall total of room sessions required for delivering the planned OPD service is obtained by adding together the room needs of all the clinics.

9. On the basis that a combined C/E room can be used for nine sessions each week, the number of combined C/E rooms required in an OPD is:

$$\frac{\text{Total number of room sessions per week}}{9}$$

In the example at Annex 3, the number of combined C/E rooms is $99 \div 9 = 11$.

Rooms for special purposes

10. For effective use of space, standard combined C/E rooms should be used for as many specialties as possible (see Chapter 3, paragraph 3.8). If rooms for special purposes are essential, the relevant Health Building Note or Design Guide should be consulted. Special rooms should be used where possible for general clinics when not being used for their particular special purpose, and they should be brought into the calculation of overall room needs.

Layout and timetabled allocation of combined consulting/examination (C/E) rooms

11. Annex 4 illustrates how the clinics listed in Annex 3 might be accommodated in an OPD with 12 combined C/E rooms. In Annex 4, it has been assumed that:

a. combined C/E rooms are provided adjacent to each other and used satisfactorily in conjunction with each other for the purpose of conducting a clinic;

b. staff and facilities are available to conduct and support clinics at the periods timetabled.

12. When calculating the number of combined C/E rooms required in a particular OPD, it is important to recognise the issues indicated in paragraph 11a and b above and, as necessary, to make adjustments to the final estimates of the size of the OPD needed.

Annex 1

Calculation of number of combined consulting/examination (C/E) rooms required

CURRENT SERVICE PROFILE	*SPECIALTY A*	*SPECIALTY B*	*METHOD OF CALCULATION*
A Population served	200,000	250,000	Local data
B New attendances per annum	2,419	2,386	Local data (Form KH09)
C Return attendances per annum	9,499	9,652	Local data (Form KH09)
D Total attendances per annum	11,918	12,038	B + C
E Attendances per 1,000 population	59.59	48.15	(D ÷ A) × 1,000
F Average attendances per patient per annum	4.93	5.05	D ÷ B*
G Number of sessions per annum	735	309	Local data (Form KH09)
H Average attendances per clinic session	16.21	38.96	D ÷ G*
J Duration of consultation period (in hours)	3.5	3.5	Local agreement
K Consultation rate—no of patients per hour	4.6	11.1	H ÷ J*

*Checks should be made to see if improvements can be achieved; these should include comparing the values with the performance of other Districts.

Annex 2

FUTURE SERVICE PROFILE	*SPECIALTY A*	*SPECIALTY B*	*METHOD OF CALCULATION*
A Planning population	250,000	250,000	Local data/ projections
B Planned total attendances	15,000	12,050	Local data, from current profile, unmet demand, need, etc
C Planned attendances per 1,000 population	60	48.2	$\frac{B \times 1{,}000}{A}$
D Planned average attendances per patient per annum	4.75	4.5	Local data — may differ from current figures
E Calculated new attendances per annum	3,158	2,678	B ÷ D
F Calculated return attendances per annum	11,842	9,372	B − E
G Average consultation time per new attendance (in minutes)	18	12	Local data — from discussion with clinicians
H Average consultation time per return attendance (in minutes)	10	4	Local data — from discussion with clinicians
J Annual consultation time required (in hours)	2,921	1,160	$\frac{(E \times G) + (F \times H)}{60}$
K Average duration of a consultation period (in hours)	3.5	3.5	Local decision
L Number of consultation periods per week	18	7	$\frac{J \div K}{48}$ (assumes a 48 working week year)
M Average attendances per clinic session	17.36	35.86	$\frac{B}{L \times 48}$
N Consultation rate — number of patients per hour	4.96	10.25	M ÷ K

Annex 3

Number of room sessions required per week

Type of session	*Number of consultation periods*		*Number of rooms used*	
	per week	*per clinic session*	*per consul-ation period*	*per clinic session*
Diabetic	1	1	5	5
Elderly	3	2	2:2	4
		1	2	2
General medicine	12	3	2:2:1	5
		3	2:1:1	4
		1	2	2
		2	2:1	3
		3	2:1:1	4
General surgery	9	3	3:2:2	7
		1	3	3
		3	2:2:1	5
		2	3:2	5
Gynae-cology	7	2	3:3	6
		2	3:2	5
		1	3	3
		2	2:1	3
Neurology	2	1	2	2
		1	2	2
Ortho-paedic	8	2	3:3	6
		3	3:2:2	7
		1	3	3
		2	3:3	6
Pain control	1	1	2	2
Dietitian	2	1	1	1
		1	1	1
Nurse treatment	3	1	1	1
		1	1	1
		1	1	1

Total number of room sessions per week = 99

Annex 4

Allocation of clinic sessions

Day/period		*Number of combined consulting and examination rooms in each string**	
		*9**	*3**
		Utilisation of C/E rooms	
Monday	am	Diabetic (5) Elderly (4)	General medicine (2) Dietitian (1)
	pm	General medicine (5) Gynaecology (3)	Pain control (2)
Tuesday	am	General surgery (7) Nurse treatment (1)	Orthopaedic (3)
	pm	Orthopaedic (7) Nurse treatment (1)	Neurology (2)
Wednesday	am	Gynaecology (6) Nurse treatment (1)	General medicine (3)
	pm	General surgery (5) General medicine (4)	
Thursday	am	Orthopaedics (6)	Elderly (2) Dietitian (1)
	pm	Gynaecology (5) General medicine (4)	General surgery (3)
Friday	am	Orthopaedic (6)	Gynaecology (3)
	pm	General surgery (5)	Neurology (2)

*A string of combined consulting and examination rooms is the number which are adjacent to each other and which can be satisfactorily used in conjunction with each other for the purpose of conducting a clinic.

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Alphabetical Index

(Main headings are shown in block capitals)

	Paragraph
Accident and emergency department	3.6a
Accommodation, description of	4.3
ACTIVITY DATA	8.1
(engineering)	6.14
Activity Data applicable to this HBN	8.5
Ancillary accommodation	4.59
Appliance clerk's office	4.46
Appliance clerk's store	4.55
Appointments system, reception and waiting	2.13
Assessment of the number of consulting/examination rooms required	Appendix
Automatic Data Processing (ADP)	5.17
Call systems (engineering)	6.68
next patient	6.71
patient/staff	6.66
staff/staff	6.67
staff location	6.72
Capricode	1.15
Children's play area and push chair parking	4.6
Chiropody room	4.36
Chiropody store	4.39
Chiropody waiting area	4.35
Circulation (cost)	7.7
Clean utility room	4.33
Cleaners space	4.59
Clinic reception desk	4.11
Clinic store	4.53
Clinic suites	4.7
Clinic waiting area	4.13
Combined consulting and examination rooms	4.19
Communications	3.20
cost	7.8
Component Data	5.33
Consulting rooms with separate examination rooms	4.24
Control access (engineering)	6.19
Controlled Drugs cupboard and alarm	3.26
engineering	6.53
Cost Allowances	1.12
COST INFORMATION	7.1
Courtyards	5.30
Damage in health buildings	5.19
Data transmission	3.23
Description of accommodation	4.3
Design Briefing System (DBS)	1.10
Design features	5.38
Design parameters (drainage)	6.81
Dietetic service	3.6
Dimensions	7.9
Dirty utility room	4.34
Disabled people	5.42
Disposal	3.19, 4.60
Doors	5.40
Drainage—internal	6.79
Economy (engineering)	6.4
Education and training	5.24
Electric clocks	6.78
Electrical installation	6.43
Electrical interference	6.44
ELECTRICAL SERVICES	6.40
Emergency electrical supplies	6.63
Engineering Commissioning	6.20
ENGINEERING SERVICES	6.1
(cost)	7.13
Engineering spaces (cost)	7.12
Enquiry point inside OPD	4.4
ENVIRONMENTAL AND OTHER TOPICS	5.1
Equipment	1.14
Essential Complementary Accommodation (ECA)	7.5
Examination lighting in treatment and consulting/examination rooms	6.52
Exclusions	1.7
Factors affecting size of department	2.7
Fire precautions	5.13, 6.16
Flooring	5.37
Functional Units	7.3
Furnishings and finishes	5.36
General design principles	3.7
GENERAL FUNCTIONAL AND DESIGN REQUIREMENTS	3.1
GENERAL SERVICE CONSIDERATIONS	2.1
General equipment store	4.52
General supplies store	4.51
Health records department	3.6e
Heating	6.23
Hot, cold and drinking water services	6.36
Inclusions	1.6
Information technology in the NHS	5.21
INTERNAL DRAINAGE	6.80
Internal environment	3.27, 5.35
Internal spaces	5.41
Interview room	4.47
Lighting	6.46
in corridors, circulation and waiting areas	6.51
in treatment rooms and consulting/examination rooms	6.52
natural and artificial	3.28
Lightning protection	6.79
Location (of department) and relationships	3.2
Maintenance and cleaning	5.20
Manager's office	4.44
Materials handling	3.19
Materials specification (drainage)	6.84
Maximum demands (engineering)	6.10
MECHANICAL SERVICES	6.21
Model specifications (engineering)	6.3
Nappy changing facilities	4.58
Natural and artificial lighting	3.28
Next patient call systems	3.24, 6.71
Noise	6.18
Noise and sound attenuation	3.31
Nurse education	5.26
Operational considerations (drainage)	6.83
Pathology department	3.6c
Pathology tests	2.17
Patient/Staff calls	3.25, 6.66

	Paragraph
Pharmacy department	3.6d
Physical measurement	4.18
Physiological measurement	3.6
Plaster facilities	4.62, 7.4
Portering	5.29
Post-graduate medical education	5.25
Radiology department	3.6b
Rehabilitation department	3.6f
Revision of guidance for out-patient accommodation	1.9
Safety (engineering)	6.15
SCOPE OF HEALTH BUILDING NOTE	1.1
Security	3.17
Service provided and major functions	2.1
Shape of rooms	5.39
Signposting	3.11
Sister's office	4.45
Size of department—factors affecting	2.7
Smoking	5.18
Social work service	3.6
Socket-outlets	6.54
Sound attenuation	3.31
Space requirements for services (engineering)	6.11
Specialty clinics	3.8
SPECIFIC FUNCTIONAL AND DESIGN REQUIREMENTS	4.1
Specimen WC	4.57
Staff facilities	3.15, 4.43
Staff location system	6.72
Staff/staff call system	6.67
Staff room	4.49
Stationery store	4.54
Statutory and other requirements	5.2
Storage	3.19, 4.50
Appliance clerk's store	4.55
Clinic store	4.53
General equipment store	4.52
General supplies store	4.51
Stationery store	4.54
Supply	3.19
Support services	4.26
Switchroom or cupboard	4.61
Telephones	3.21, 6.73
Temperature controls	6.25
Treatment facility	4.28
Treatment waiting area	4.27
Undergraduate medical students	5.24
Upgrading or adaptation of existing buildings	5.3
Venepuncture	4.40
cubicles	4.42
waiting area	4.41
Ventilation	5.35
(engineering)	6.27
Ventilation controls	6.35
Visiting staff office	4.48
WCs	4.56
Windows	3.35
Wireways for Data links	6.77
Works cost	7.5
Works Guidance Index	1.11
X-ray department	3.6a
X-ray equipment (engineering)	6.62

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